

Sloan Canyon  
National Conservation Area  
Implementation Management Strategy



NATIONAL  
CONSERVATION  
LANDS



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# **CHAPTER 1**

## **INTRODUCTION AND PURPOSE**

### **A. INTRODUCTION**

In November 2002, Congress designated the Sloan Canyon National Conservation Area (NCA) to preserve and protect a portion of southern Nevada's Mojave Desert as a permanent asset for future generations. The Clark County Conservation of Public Land and Natural Resources Act of 2002 established the Sloan Canyon NCA and the North McCullough Wilderness, which is entirely contained within the NCA. The 48,438-acre NCA, which forms the mountainous southern skyline of the city of Henderson and Las Vegas, contains unique scenic and important archaeological sites. The center piece of the NCA is Petroglyph Canyon, one of the most significant cultural resources in southern Nevada. More than 300 rock art panels with nearly 1,700 designs represent native cultures dating from the Archaic to historic periods.

The purpose of this Implementation Management Strategy is to examine potential development scenarios for facilities within the NCA that meets the intent of the Resource Management Plan (RMP) while balancing the needs and expectations of visitors along with managing for the longevity of funding sources. This is not a decision document, but rather a detailed look at viable, possible options for meeting future demands. Additional analysis and public involvement will occur prior to implementation of these recommendations.

### **B. REGULATORY GUIDANCE AND EXISTING PLANS**

In establishing Sloan Canyon as a national conservation area, Congress also established a special fund account through the sale of 500 acres of adjacent federal land to fund the development and operations of the NCA. The account funds:

- The construction and operation of facilities to support the management of the conservation area;
- The construction and repair of trails and roads in the conservation area authorized under the management plan;
- Research on and interpretation of the archaeological and geologic resources of the conservation area; and
- Conservation and research relating to the conservation area

### **2005 Business Plan**

In 2005, a draft business plan was completed that addressed needs for facilities, staffing, operations, and maintenance within the Sloan Canyon NCA. Since this plan was developed, internal and external factors have changed, leading to an opportunity to reevaluate resources and needs and produce an updated implementation management strategy.

## Resource Management Plan

The following vision statement for Sloan Canyon was developed in consultation with cooperating agencies. It is based on the direction, intent, and spirit of the Sloan Canyon NCA legislation, as well as on public input received during the RMP public scoping process.

The Bureau of Land Management (BLM) will manage the Sloan Canyon NCA to preserve, protect, and enhance the area's cultural features and natural resources and wilderness values for the benefit and enjoyment of present and future generations by:

- Protecting the Sloan Canyon Petroglyph Site and respecting the canyon for its importance to Native Americans.
- Providing education on the importance of preserving and protecting the area's cultural, natural, and wilderness values.
- Providing information and education on Sloan Canyon NCA's resources in a creative manner.
- Providing recreational opportunities that are compatible with and protect the various elements of the natural landscape.

The RMP provides an overview of allowable uses and expectations of facility development and also sets visitation limitations in the Petroglyph Management Area. The RMP states that "visitors must join a BLM-sponsored tour" to access the Petroglyph Management Area on weekends. The plan also states that "no more than one guided group of no more than 20 people are allowed in the Petroglyph Management Area at one time." Given the usual pattern of increased demand for visitation on weekends, these visitation limits will have an impact on total visitation to the Petroglyph Management Area by limiting the number of weekend visitors that can be accommodated. The RMP also states that during the weekdays "visitors may go to the Petroglyph Management Area unaccompanied by a BLM-sponsored guide if they obtain a permit" and that "a total of no more than 25 permits per hour will be issued for self-guided tours." A full analysis of visitation potential is discussed in Chapter 2.



Along the Cowboy Trail

## C. REGIONAL CONTEXT

Currently, residential housing, schools, parks, and businesses border much of the northern and western edges of the Sloan Canyon NCA. Eventually, development will occur near Petroglyph Canyon, which is now protected by an undeveloped, somewhat inaccessible desert landscape.

The NCA also shares several miles of its boundary with fully built-out, higher-density residential neighborhoods of Henderson, Nevada. The City of Henderson is a dedicated partner and has provided its residents with high-quality recreational opportunities for decades. The City of Henderson and BLM have both benefited from a long relationship of coordinating on land planning and recreation management decisions.

Recent trail and trailhead construction and increased publicity surrounding Sloan Canyon have led to a noticeable increase in visitation. Visitors want to see more developed features and amenities for comfort and enjoyment, along with appropriate infrastructure to manage use while protecting the resources.

The City of Henderson recently updated its Land Use Plan for the West Henderson area, which is near Petroglyph Canyon. The Land Use Plan includes detailed projections for the city and the West Henderson area in 5-year increments from 2010 to 2050, at which time the immediate



View from NCA to the North

area would be considered built out.

Population growth for Henderson is expected to reach 500,000 people in this time period, with over 80,000 residing in the West Henderson area. New roads, such as Democracy Road, will connect the Anthem neighborhood and the emerging Inspirada community with the proposed Sloan Interchange at Interstate 15. These roads will also provide improved access to the Sloan NCA. Other growth activity will continue near Dutchmen Pass and Interstate 95, as well as in communities such as Paradise Hills.

## D. PUBLIC INVOLVEMENT

On December 4, 2014 a public meeting was held to review initial concepts for the Sloan Canyon National Conservation Area Implementation Management Strategy. The public meeting briefed interested parties on the strategy's purpose, potential facility development, discussed the relationship between the program elements and the special account, and gathered input on desired program elements and phasing. A complete summary of the public comment period is provided in Appendix B.

## **Participation**

Almost 100 people attended the public meeting on December 4<sup>th</sup> with 20 people providing input on comment forms provided at the meeting. To gather additional comments, an online virtual survey was developed that provided an overview of the materials presented at the meeting and a venue for comments. Another 52 comment responses were collected from the online virtual survey with over 100 reviewing the meeting materials.

Many comments expressed a concern for the protection of resources, especially within Petroglyph Canyon, as well as the importance of partnerships with the city of Henderson and volunteer groups. Also stressed was the need to include these groups and the general public on the distribution of information regarding future developments as projects move forward. The importance of volunteers in the stewardship of the NCA was also emphasized. Some responses mentioned conformance with the Resource Management Plan as well as inquiring how funds from the special account will be used.

### **Key comments from the public comment period are provided below:**

- Importance of additional trails and completing the trail network
- Improve road access to Petroglyph Canyon/Visitor Contact Station
- Improve protection and management of Petroglyph Canyon through on site staff presence and facilities
- General support for all program elements including Phase 1 and 2 (See Chapter 3.)
- Initiate design of Phase 1 and 2 to improve access and manage the resource
- Additional emphasis on improvements to Dutchman Pass Road

## **Future Public Involvement**

It is important to emphasize that this strategy is not a decision document. Development of the proposed trailheads and other facilities will require subsequent analysis and planning under the National Environmental Policy Act (NEPA), which includes additional public involvement and an assessment of environmental, social and recreational impacts.

## **E. STUDY AREA**

This implementation strategy looks at overall visitation and recreation trends related to the use of the Sloan Canyon NCA, which can be accessed through several neighborhoods and City of Henderson trailheads. However, the analysis of facility development, access, operations, and maintenance is targeted to the four trailheads identified in the RMP:

- Visitor Contact Station/Petroglyph Canyon Trailhead

- Hidden Valley Trailhead
- Dutchman Pass Trailhead
- Quo Vadis Trailhead

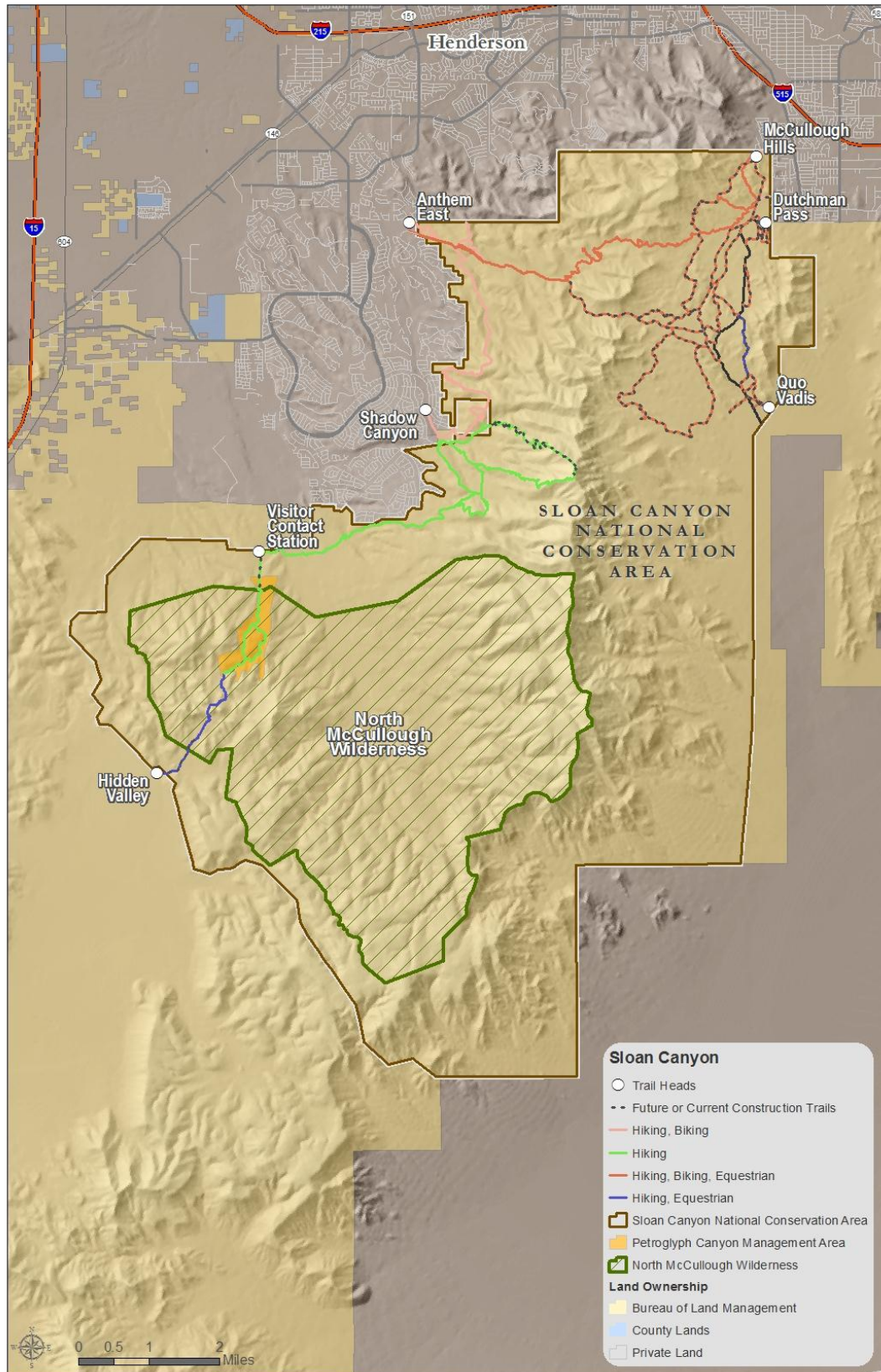
In addition to the four trailheads identified in the RMP, three other access points into the NCA exist in the surrounding neighborhoods:

- Shadow Canyon
- Anthem Hills
- McCullough Hills

Figure 1-1 shows an overview of the trailhead locations and context to the greater Las Vegas Area.



Petroglyph Canyon



**Figure 1-1. Sloan Canyon National Conservation Area Overview**

## **CHAPTER 2**

### **MARKET DEMAND ANALYSIS**

#### **A. CURRENT ACCESS AND HISTORICAL VISITATION TO SLOAN CANYON**

##### **Overview of Existing and Planned Access Points/Facilities**

BLM staff report that historical visitation to Sloan Canyon NCA has primarily consisted of trail use by individuals living in close proximity to the NCA boundary—most notably, individuals from the community of Henderson, Nevada. These visitors use existing trail systems to access the NCA, and they reportedly use the trails for running, walking (including dog walking), and bike riding, with a high level of repeat use. Trailheads that are located near and easily accessible from residential subdivisions within Henderson are the most popular points of access into the NCA, according to input and trail count data provided by BLM staff.

The following subsections discuss the current access points to the Sloan Canyon NCA, ease access to these areas from surrounding communities, facilities/amenities available onsite, and judgments on future visitation potential.

##### ***Hidden Valley Access***

Hidden Valley is the southernmost access point within the NCA and provides access to the Hidden Valley Trail which leads to the North McCullough Wilderness and the Petroglyph Management Area from the south. The permitted uses on Hidden Valley Trail include hiking and horseback riding.

The Hidden Valley Trailhead is very remote, with the proposed trailhead located approximately 30 miles (by vehicle) southwest of central Henderson (Figure 2-1). In addition, access to the trailhead is difficult; approximately 5 miles of the road leading to the trailhead is unpaved and requires the use of a high-clearance four-wheel-drive vehicle. The unpaved road—Sloan Canyon Access Road—is not well marked and consists entirely of a very primitive single-lane road. The unpaved road considerably increases the trip time to the trailhead, as vehicles are restricted to low speeds, generally less than 15 miles per hour.

There are no facilities onsite, other than a small interpretive sign and map. The remoteness and primitive access to the site, while appealing to some, reflects a significant barrier for most visitors. The Sloan Canyon RMP calls for a parking lot, equestrian staging area, interpretive kiosk, and vault toilets to be developed onsite at the trailhead. To achieve higher-than-historical levels of use and visitation, the 5-mile unimproved dirt road would need to be improved so as to allow the site to be accessible by vehicles other than high-clearance, four-wheel-drive vehicles. Road improvements might include grading/leveling and use of paved or gravel substrate to enhance access.



**Figure 2-1. Proposed Location for Hidden Valley Trailhead**

### ***Petroglyph Canyon Access***

This site provides access to Petroglyph Canyon and the wider Petroglyph Management Area from the north. Only hiking is permitted within the Petroglyph Management Area, with limits on daily visitation. The site lies within close proximity to the boundary of West Henderson and, with future growth of West Henderson, will lie directly adjacent to newly developed subdivisions in that community.

Currently, access to this site is via a primitive, undeveloped, and unsigned dirt road which lies under a set of power lines running east to west. The site can be accessed from Interstate 15 to the west. However, considering the primitiveness of the road, the use of high-clearance, four-wheel-drive vehicles is required to access the site (Figure 2-2). The primitive road access significantly limits visitation to the site, including the Petroglyph Canyon.



**Figure 2-2. Entrance Road to Petroglyph Canyon Area**

Currently, there are no facilities or amenities onsite. However, the Sloan Canyon RMP calls for a number of facilities to be developed at this location, including a visitor contact station that will manage access to Petroglyph Canyon and the North McCullough Wilderness area. The proximity of this site to West Henderson, as well as proposed access improvements and newly developed or extended paved roadways, is expected to greatly enhance visitation to this site. The availability of, and improved access to, Petroglyph Canyon is expected to broaden the visitor base by attracting nonlocal visitors to the area, in addition to local visitors.

### ***Shadow Canyon Access***

This access point is located outside the boundary of the Sloan Canyon NCA and within a subdivision of Henderson along Shadow Canyon Drive. Access from this site to the NCA is easy and convenient, particularly for residents of the area who are expected to represent the largest user group of this access point into the NCA. The trailhead facilities were built and are currently maintained by the City of Henderson.

Onsite facilities/amenities include a paved parking area with six spaces, street parking, and a covered interpretive panel that includes trail maps of the area. The site provides access to the Anthem East Trail system, the Black Mountain Trail, and provides connectivity to other trails within the conservation area. Hiking is the only permitted activity on the Black Mountain Trail and other trails maintained by BLM in this area.

Figure 2-3 depicts the entrance to the trailhead facilities at Shadow Canyon (in the foreground of the image).



**Figure 2-3. Shadow Canyon Access Point**

### ***Anthem East Access***

This access point to the Sloan Canyon NCA is very similar to the Shadow Canyon access point, as it is located outside the NCA within a subdivision in Henderson, and was constructed and is currently maintained by the City of Henderson. The site is located next to Anthem Hills Park and is easily accessible from McCullough Hills Parkway.



Figure 2-4. Anthem East Trail

Onsite facilities/amenities include a paved parking area with roughly 55 spaces, interpretive displays that include trail maps of the area, and a shaded picnic bench. The site provides access to the Anthem East Trail and the McCullough Hills Trail.

### ***Mission Drive/McCullough Hills Trailhead Access***

This access point is located at the northeastern boundary of the Sloan Canyon NCA and is similar to the Shadow Canyon and Anthem East access points, as it is located in close proximity to a residential area of Henderson. The City of Henderson developed the McCullough Hills Trailhead at this location; the trailhead offers onsite facilities, including paved parking, restrooms, drinking water, waste disposal, and interpretive information (Figure 2-5). Unlike Shadow Canyon and Anthem East, the Mission Drive access point is located *within* the boundary of the NCA but is managed by the City of Henderson via right-of-way. The McCullough Hills Trailhead provides convenient access to visitors residing within the area and is among the most heavily used access points to the NCA. This site provides access to the McCullough Hills Trail and connects to other trails within the NCA. Permitted activities on most of the trails in this area include hiking, biking, and equestrian uses.



**Figure 2-5. Mission Drive/McCullough Hills Trailhead Access Point**

### ***Dutchman Pass Access***

This site is located approximately 1 mile south of the Mission Drive access point, is entirely undeveloped, and borders a residential neighborhood in Henderson. The Sloan Canyon RMP calls for a parking lot, equestrian staging area, interpretive kiosk, and vault toilets to be developed onsite. The exact location of these onsite facilities has yet to be determined. The Mission Drive/McCullough Hills Trailhead access point would likely serve much of the demand for access to the Sloan Canyon NCA in this area, as it is only located approximately 1 mile north of Dutchman Pass and has fully developed facilities. Therefore, there would be less of a need to provide access at Dutchman Pass, as it is already being provided at the McCullough Hills Trailhead. Given this, BLM might consider Dutchman Pass as a lower priority when developing access points specified in the RMP. Figure 2-6 shows the undeveloped area where facilities might be developed to serve the Dutchman Pass access point.



**Figure 2-6. Dutchman Pass Access Point**

### **Quo Vadis Access**

This is another undeveloped access point to the Sloan Canyon NCA. Quo Vadis is located approximately 5 miles south of the Mission Drive access point, in a relatively remote location. Primary access is from US Highway 95, yet visitors must travel on undeveloped dirt roads for approximately 4 miles after turning off US 95. Similar to the Hidden Valley access point, the remote location of and primitive access to Quo Vadis, while appealing to some, are a significant barrier for most visitors. The Sloan Canyon RMP calls for a parking lot, equestrian staging area, interpretive kiosk, and vault toilets to be developed onsite. When developed, this site will provide visitors with access to various hiking, biking, and equestrian trails.

### **Historical Visitation to Sloan Canyon National Conservation Area**

From 2011 to 2014, BLM has monitored trail use within the Sloan Canyon NCA using magnetic and infrared counters. The counters count either visitors or vehicles entering a particular area. Vehicle counts were converted to visitors by multiplying each vehicle by 2.6 passengers per vehicle, based on BLM input. Where required, the counts were adjusted for two-way traffic to reflect individual visitors. Complete annual visitor counts were not available for all years and for all trails, with counts missing for certain months in some years. Furthermore, certain trails were monitored in some years and not in others. Therefore, to estimate total annual visitation levels for different areas of the NCA, the periods offering the most complete counts for a particular trail/access point were aggregated to reflect visitation for a complete year. This approach results in an estimate of total visitation to the NCA and provides insights on the relative level of use within different areas of the NCA.

Exhibit 2-1 summarizes the estimated total annual visitation based on trail use monitoring over the last 4 years within the Sloan Canyon NCA for each of the seven access points discussed in the preceding section.

**Exhibit 2-1. Average Annual Visitation to Sloan Canyon NCA, 2011-2014**

Trail Count Location	Visitor Count	Share of Total Visitation
Shadow Canyon	32,753	42.1%
Anthem East	27,048	34.8%
Mission Drive	13,819	17.8%
Petroglyph Canyon	1,723	2.2%
Quo Vadis	957	1.2%
Dutchman Pass	828	1.1%
Hidden Valley	699	0.9%
<b>Total</b>	<b>77,828</b>	<b>100%</b>

Source: BLM.

Exhibit 2-1 reveals that the Shadow Canyon access point located along the northeastern boundary of the Sloan Canyon NCA reflects the highest levels of visitation, at nearly 33,000 visitors per year (or 42.1% of annual visitation). BLM staff reported that no trail count data was available for the Anthem East access area but reported that this access point receives a significant level of visitation. BLM estimates the Anthem East visitation using a portion of the Shadow Canyon visitation, since the Anthem East access point is very similar to the Shadow Canyon access and provides visitors with access to similar trails. Anthem East visitation is estimated to be approximately 27,000 visitors per year (or 34.8% of annual visitation). The Mission Drive access point receives nearly 14,000 visitors per year (or 17.8% of annual visitation). Together, Shadow Canyon, Anthem East, and Mission Drive represent nearly 95% of total annual visitation to the NCA (or roughly 74,000 visitors per year). The high level of visitation to the NCA from these three access points is due to all three points being developed, easily accessible, and in close proximity to Henderson neighborhoods. Therefore, access for Henderson residents is convenient and easy. This type of local use represents a “built in” visitation base that generates a significant amount of repeat use which is less dependent on wider trends in tourism visitation to outdoor recreation attractions. Instead, locals use the Sloan Canyon NCA for their own recreation purposes—hiking, biking, nature viewing, etc.—and access the site repeatedly, partly because the NCA is conveniently located close to their neighborhoods.

Significantly fewer visitors access the Sloan Canyon NCA through the Hidden Valley, Petroglyph Canyon, Dutchman Pass, and Quo Vadis access points, which together have a total of approximately 4,200 visitors per year (or 5.4% of total annual visitation). Access to those four sites is much more limited because of the long stretches of undeveloped road requiring the use of four-wheel-drive vehicles, as well as the lack of signage. The remoteness of Hidden Valley and Quo Vadis access points is another limiting factor that deters many visitors. Access and facility improvements proposed in the Sloan Canyon RMP would be expected to improve visitation levels for Petroglyph Canyon and Dutchman Pass access points but would not be expected to significantly impact visitation to Hidden Valley or Quo Vadis access points because of access limitations and remoteness in these areas.

Exhibit 2-2 indicates that visitation to the Sloan Canyon NCA is greatest during the cooler fall, winter, and spring seasons, which correspond to the period of October through April. Visitation during this period is distributed relatively evenly, with average monthly visitation ranging between 7,000 and 9,000 visitors (or between 10% and 12% of annual visitation). March has the highest visitation, averaging nearly 9,300 visitors (or 11.9% of annual visitation). Visitation steadily declines after April as daily temperatures increase with the approach of summer, discouraging outdoor recreation within the NCA. Not surprisingly, visitation is at its lowest point during the month of July, which is also typically the hottest month, with daytime temperatures regularly exceeding 100 degrees Fahrenheit.

**Exhibit 2-2. Average Monthly Visitation to Sloan Canyon NCA**

	Visitation	Share
January	8,252	10.6%
February	8,113	10.4%
March	9,292	11.9%
April	7,373	9.5%
May	5,206	6.7%
June	3,850	4.9%
July	2,614	3.4%
August	3,616	4.6%
September	5,249	6.7%
October	8,142	10.5%
November	8,400	10.8%
December	7,722	9.9%
<b>Total</b>	<b>77,828</b>	<b>100%</b>

## **B. REGIONAL TOURISM AND OUTDOOR RECREATION TRENDS**

### **Las Vegas Tourism Trends**

Sloan Canyon NCA is situated in a highly active tourism environment offering visitors access to numerous attractions and activities in the region. From a visitation standpoint, the NCA benefits significantly from being situated near Las Vegas, which is a major national and international tourism destination. Visitation to Las Vegas is undoubtedly the primary driver of tourism in southern Nevada and generates visitation to numerous natural/cultural attractions in the region. Overall trends in visitation to Las Vegas will have an impact on visitation to the Petroglyph Management Area of the NCA. This subsection presents general trends in tourism and visitation in southern Nevada, particularly Las Vegas visitation trends.

The Las Vegas Convention and Visitors Authority tracks visitation and tourism trends in southern Nevada and publishes annual reports on visitor demographics and trip characteristics for the communities of Las Vegas, Laughlin, and Mesquite. These communities are the primary tourism centers in the region. Exhibit 2-3 summarizes total annual visitation to Las Vegas over the last 10 years, from 2004 to 2013.

**Exhibit 2-3. Historical Annual Visitation to Las Vegas, 2004-2013**

	Visitors to Las Vegas	% Change
2004	37,388,781	5.2%
2005	38,566,717	3.2%
2006	38,914,889	0.9%
2007	39,196,761	0.7%
2008	37,481,552	-4.4%
2009	36,351,469	-3.0%
2010	37,335,436	2.7%

	Visitors to Las Vegas	% Change
2011	38,928,708	4.3%
2012	39,727,022	2.1%
2013	39,668,221	-0.1%

Source: Las Vegas Convention and Visitors Authority.

From 2004 to 2013, visitation to Las Vegas grew in every year except 2008, 2009, 2013 when visitation declined by 4.4%, 3.0%, and 0.1%, respectively. The declines in 2008 and 2009 were mostly due to the impact of the national recession in those years, which reduced tourism activity nationally. Since 2009, visitation has rebounded and, in 2012, exceeded the pre-recession (2007) peak visitation of nearly 39.2 million visitors. Visitation declined only slightly in 2013 by just 0.1% and remained close to the all-time peak visitation of 39.7 million visitors in 2012. Visitation of nearly 27.8 million visitors through August 2014 was 4.1% higher than visitation through August 2013, indicating that visitation rebounded in 2014 despite the slight slowdown in 2013.

Visitation to Las Vegas increased at an average annual rate of 0.7% over the last 10 years, including significant declines in 2008 and 2009. Over the last 43 years, from 1970 to 2013, visitation to Las Vegas has steadily and consistently increased in all but 6 years, highlighting the strength of the positive visitation trends to Las Vegas.

The 2013 Las Vegas Visitor Study Profile reported that roughly 50% of all visitors were male and 50% were female, 79% were married, 15% were single, and 6% were divorced or widowed. In 2013, 51% of the visitors surveyed were college graduates and 13% had only a high school diploma or less. The study found that the average visitor age was 46, with 42% of visitors being between the ages of 21 and 39, 34% between the ages of 40 and 59, and 24% over the age of 59. The 2013 study results therefore indicate that Las Vegas caters primarily to middle-age married visitors. Exhibit 2-4 summarizes the origins and key trip characteristics of Las Vegas visitors from 2009 to 2013.

Exhibit 2-4 indicates that the primary origins of visitors to Las Vegas are from western states, primarily California, which over the last 5 years has averaged 54% of visitation to Las Vegas. Over the last 5 years, foreign visitation has averaged 17% of total visitation to Las Vegas. Exhibit 2-4 indicates that the origins as shares of total visitation have remained relatively constant during the last 5 years, with some decline in the share of visitors from mid-western states.

**Exhibit 2-4. Origins of Las Vegas Visitors, 2009-2013**

	2009	2010	2011	2012	2013	Average
<b>Domestic</b>	<b>86%</b>	<b>82%</b>	<b>84%</b>	<b>83%</b>	<b>80%</b>	<b>83%</b>
Eastern States	7%	6%	6%	7%	6%	6%
Southern States	11%	11%	12%	11%	12%	11%
Midwestern States	12%	12%	11%	11%	10%	11%
<u>Western States</u>	55%	54%	55%	54%	52%	54%

	2009	2010	2011	2012	2013	Average
California	31%	30%	31%	33%	33%	32%
Southern California	26%	26%	26%	26%	26%	26%
Northern California	5%	4%	5%	7%	7%	6%
Arizona	10%	7%	9%	6%	6%	8%
Other Western States	14%	16%	15%	15%	13%	15%
<b>Foreign</b>	<b>14%</b>	<b>18%</b>	<b>16%</b>	<b>17%</b>	<b>20%</b>	<b>17%</b>

Source: Las Vegas Convention and Visitors Authority.

The average visitor group size was 2.4 persons, and the average length of stay was 4.5 days. Not surprisingly, virtually all visitors surveyed indicated that they purchased food and beverages during their trip, while 61% of visitors made retail purchases and 6% made sightseeing purchases. In 2013, average food and beverage expenditures per trip were \$278.95 (or \$64.87 per day), retail expenditures were \$140.90 (or \$32.77 per day), and sightseeing spending expenditures were \$9.29 per trip (or \$2.16 per day). The share of visitors making retail purchases declined in the last 2 years, while the share of visitors making sightseeing purchases has increased somewhat during this period. In general, as presented in Exhibit 2-5, the share of visitors making food and beverage, retail, and sightseeing expenditures has remained stable over the last 5 years. The much lower expenditures on sightseeing suggests that visitor budgets for sightseeing activities tend to be limited compared with other trip expenditures, including lodging, food and beverage, and retail spending.

Exhibit 2-5 also indicates that on average 58% of visitors travel to Las Vegas by auto, bus, or recreational vehicle (RV), while 42% travel by plane. In 2013, 50% of visitors indicated that they used their own vehicle when traveling around Las Vegas and 12% reported using a rental car. The high use of personal vehicles and rental cars (totaling 62% of visitors) indicates that most visitors are mobile and have the ability to travel to areas/attractions outside Las Vegas, including Sloan Canyon NCA.

**Exhibit 2-5. Trip Characteristics of Las Vegas Visitors, 2009-2013**

	2009	2010	2011	2012	2013	Average
Average Persons per Group	2.4	2.4	2.3	2.4	2.4	2.4
Average Days/Trip	4.6	4.6	4.7	4.3	4.3	4.5
% Visitors Making F&B Purchases	100%	100%	100%	100%	99%	100%
Average F&B Spending/Trip	\$250.39	\$256.82	\$275.27	\$265.11	\$278.95	\$265.31
% Visitors Making Retail Purchases	61%	64%	61%	58%	59%	61%
Average Retail Spending/Trip	\$101.97	\$122.80	\$129.34	\$149.29	\$140.90	\$128.86
% Visitors Making Sightseeing Purchases	5%	5%	5%	8%	7%	6%
Average Sightseeing Spending/Trip	\$5.77	\$7.21	\$10.24	\$9.63	\$9.29	\$8.43

	2009	2010	2011	2012	2013	Average
% of Visitors Arriving by Auto/Bus/RV	58%	59%	56%	57%	58%	58%
% of Visitors Arriving by Air	42%	41%	44%	43%	42%	42%

Source: Las Vegas Convention and Visitors Authority.

The visitor demographic to Las Vegas, however, may not be entirely representative of the visitor demographic for Sloan Canyon NCA and therefore may not be indicative of those individuals who might visit Sloan Canyon. As discussed in Section D of this chapter, the Las Vegas visitor demographic is expected to be most interested in accessing the Petroglyph Management Area of the Sloan Canyon NCA. For those Las Vegas visitors interested in visiting areas/attractions outside Las Vegas, the petroglyphs within the Petroglyph Management Area of the NCA may be considered a unique cultural attraction worth visiting. However, most NCA visitation, which is based on the use of trails, is expected to be generated by locals, not Las Vegas visitors, because Las Vegas visitors seeking hiking opportunities would have access to trail sites closer to Las Vegas or to their other travel destinations. In addition, most Las Vegas visitors are mainly seeking gaming and live entertainment options, not outdoor natural/cultural recreation opportunities. The 2013 Las Vegas Visitor Study provided profile information on the share of Las Vegas visitors who visited or planned to visit locations other than Las Vegas. According to the Las Vegas Visitor Study, 14% of Las Vegas visitors in 2008, 13% in 2010, and 14% in 2012 reported that they had visited locations other than Las Vegas. Therefore, only a relatively small minority of visitors to Las Vegas indicated that they visited other places during (or before or after) their trip (Exhibit 2-6).

**Exhibit 2-6. Other Locations Visited by Las Vegas Visitors, 2008, 2010, and 2012**

	2008	2010	2012	Average
Hoover Dam	64%	64%	57%	62%
Grand Canyon NP	50%	61%	61%	57%
Lake Mead NRA	31%	20%	21%	24%
Zion NP	14%	6%	10%	10%
Bryce Canyon NP	10%	6%	10%	9%
Red Rock Canyon NCA	8%	9%	5%	7%
Death Valley NP	3%	7%	7%	6%
Laughlin, NV	6%	1%	7%	5%
Valley of Fire SP	4%	3%	6%	4%
Mt. Charleston	3%	2%	7%	4%
Mesquite, NV	3%	1%	1%	2%
Primm, NV	2%	1%	2%	2%
Other	2%	2%	2%	2%

Source: Las Vegas Convention and Visitors Authority.

Note: The percentages reported in this exhibit are for visitors who reported visiting other places, in addition to their trip to Las Vegas, and do not include visitors for whom Las Vegas was their only destination. As noted elsewhere in this chapter, the share of visitors who visited other locations during their trip was 13%-14%, based on 2008, 2010, and 2012 visitor surveys conducted by the Las Vegas Convention and Visitors Authority.

According to the Las Vegas Visitor Studies conducted in 2008, 2010, and 2012, Hoover Dam, Grand Canyon National Park (NP) and Lake Mead National Recreation Area (NRA) consistently rank as the top three other attractions visited by Las Vegas visitors, with 62%, 57%, and 24% of visitors who traveled to other attractions in the area, reporting to have visited these sites, respectively. Red Rock Canyon NCA, which is the outdoor recreation site closest to Sloan Canyon NCA, ranks (on average) as the sixth most popular other attraction, with 7% of Las Vegas visitors who traveled to other attractions in the area reporting to have visited this site. Death Valley NP, another site offering a desert wilderness experience comparable in certain respects to Sloan Canyon NCA, ranks as the seventh most popular attraction among visitors traveling other areas, with 6% of these visitors reporting to have visited the site. In addition, Valley of Fire State Park (SP), another comparable outdoor recreation site in the region, ranks as the ninth most commonly visited other site, with 4% of visitors reporting that they visited this site during their trip.

Exhibit 2-6 clearly indicates the popularity of nearby high-profile national park units, including Grand Canyon NP, Lake Mead NRA, Zion NP, and Bryce Canyon NP. These are destination parks for many visitors traveling to or through Las Vegas. However, Exhibit 2-6 also indicates the popularity of nearby outdoor recreation sites, most notably Red Rock Canyon NCA, which is conveniently located next to Las Vegas and is an easy trip for most visitors. Although the entrance to Petroglyph Canyon—the primary entrance point to the Sloan Canyon NCA and area of interest for Las Vegas visitors—is located somewhat farther from central Las Vegas than Red Rock Canyon NCA, Sloan Canyon NCA is still easily accessible to visitors staying in Las Vegas. The current one-way trip time from central Las Vegas to the northwest section of the Sloan Canyon NCA (near the entrance to Petroglyph Canyon) is approximately 35-40 minutes, with Interstate 15 offering a convenient (high speed) connection between Las Vegas and the NCA.

### **Visitation to Natural and Cultural Attractions in the Region**

This subsection summarizes trends in annual visitation to other natural and cultural sites within the region, which provide insights on the health of outdoor participation levels for sites that have resources and activities similar to those at Sloan Canyon NCA. The sites that are judged to be the most similar to the Sloan Canyon NCA in terms of location, access, permitted activities, and onsite natural/cultural resources include Red Rock Canyon NCA, Valley of Fire State Park (SP), Mojave National Preserve, and Death Valley NP. These sites provide visitors the opportunity to experience varying degrees of outdoor desert wilderness, with some sites offering more developed and easily accessible facilities/amenities and other sites providing a more primitive wilderness experience. Sloan Canyon NCA will offer a unique mix of desert wilderness experience, with minimal development and facilities yet convenient access from nearby communities, including primarily Henderson but also Las Vegas. Having an undeveloped wilderness area so close to a large urban setting like the Greater Las Vegas-Henderson metropolitan area is relatively unique.

As previously noted, Grand Canyon NP, Lake Mead NRA, Death Valley NP, Zion NP, and Bryce Canyon NP are some of the most popular natural/cultural attractions in the region. These outdoor attractions generate large amounts of visitation from local and nonlocal/international visitors annually and are some of the biggest drivers of outdoor recreation within the region. Many visitors travel to several of these popular attractions on a single visit because of the convenience of interconnecting highways between these parks/sites. Las Vegas is one of the primary tourism hubs where many visitors' trips begin and end; from Las Vegas, visitors often make day or overnight trips to other regional destinations. Therefore, Las Vegas visitation trends, as presented in the previous subsection, tend to influence nonlocal outdoor recreation visitation to other sites in the region—including, to some extent, future visitation to Sloan Canyon NCA as well.

The natural attractions which lie in closest proximity to Sloan Canyon NCA include Red Rock Canyon NCA, Lake Mead NRA, Spring Mountain Ranch SP, Valley of Fire SP, and Mojave National Preserve.

Other relevant outdoor attractions in the region that are located farther away include Grand Canyon NP, Death Valley NP, Zion NP, and Bryce Canyon NP—all of which are highly popular with nonlocal and international visitors traveling to Nevada, California, and Arizona. Joshua Tree NP is located outside the immediate area but is relevant in that it represents an outdoor desert attraction situated within the general tourism region.

Cultural attractions in the region that have similar cultural resources to those available at Sloan Canyon NCA and that would attract a similar visitor demographic include Lost City Museum, Old Las Vegas Mormon Fort State Historic Park (SHP), and Clark County Heritage Museum.

Historical annual visitation to these natural and cultural sites is presented in Exhibits 2-7 and 2-8.

Exhibit 2-7 shows that all National Park Service (NPS) park units in the region, with the exception of Lake Mead NRA, have generally experienced positive average annual growth over the last 5 years. Grand Canyon NP experienced growth in all years except 2011, when visitation declined slightly by 2.1%. Visitation to Bryce Canyon NP increased in every year except 2013, when visitation declined by 5.3%. Visitation to Zion NP declined in 2010 and 2013 (2.5% and 5.6%, respectively) but increased in 2011 and in 2012. Visitation to Death Valley NP has fluctuated from year to year, but the park experienced an overall average annual increase of 3.5% during this 5-year period. Visitation to Mojave National Preserve has increased in each of the last two years (2012 and 2013), but visitation declined from a peak of 600,897 visitors in 2010 to 536,006 visitors in 2011. Joshua Tree NP has experienced consistent minor to moderate declines from 2010 to 2013, but the park experienced an overall average annual increase of 1.0% during this 5-year period. Finally, visitation to Lake Mead NRA declined in every year except 2013, likely due to impacts associated with lower lake levels and lower recreational

boating use. In summary, visitation levels at other NPS park units throughout the region have remained reasonably stable or generally have increased over the last 5 years.

**Exhibit 2-7. Annual Visitation to Regional National Park Service Sites, 2009-2013**

	Lake Mead NRA	Mojave National Preserve	Death Valley NP	Joshua Tree NP	Zion NP	Bryce Canyon NP	Grand Canyon NP
2009	7,668,689	528,865	828,574	1,304,471	2,735,402	1,216,377	4,348,068
2010	7,080,758	600,897	984,775	1,434,976	2,665,972	1,285,492	4,388,386
2011	6,396,682	536,006	946,867	1,396,237	2,825,505	1,296,000	4,298,178
2012	6,285,439	542,527	984,568	1,396,117	2,973,607	1,385,352	4,421,352
2013	6,344,714	549,599	951,972	1,383,340	2,807,387	1,311,875	4,564,840
<b>Average</b>	<b>6,755,256</b>	<b>551,579</b>	<b>939,351</b>	<b>1,383,028</b>	<b>2,801,575</b>	<b>1,299,019</b>	<b>4,404,165</b>
<b>CAGR</b>	<b>-4.6%</b>	<b>1.0%</b>	<b>3.5%</b>	<b>1.5%</b>	<b>0.7%</b>	<b>1.9%</b>	<b>1.2%</b>

Source: NPS.

The following summarizes the current entrance fees and relevant tour rates at NPS Park units identified in Exhibit 2-7:

- Lake Mead NRA: \$10.00 per vehicle or \$5.00 per person entrance fee; There are multiple commercial outfitters providing a range of guided tours within and around Lake Mead, mostly focusing on water or vehicle related activities that are less comparable to the guided hike service in Petroglyph Canyon. Tour services range widely and are typically \$100 per person or more.
- Mojave National Preserve: No entrance fee or comparable guided tour fees
- Death Valley National Park: \$20.00 per vehicle or \$10.00 per person entrance fee; \$15.00 and \$20.00 for the guided tour fees for Scotty's Castle and Lower Vine Ranch tour, respectively.
- Joshua Tree National Park: \$15.00 per vehicle or \$5.00 per person entrance fee; \$5.00 for the Keys Ranch Guided Walking Tour
- Zion, Bryce Canyon, and Grand Canyon National Parks: \$25.00 per vehicle or \$12.00 per person entrance fee; there are multiple commercial outfitters providing guided hikes and tours within these parks, many of which are full day or multiple day excursions. Half-day guided tours are typically \$100 per person or more.

Exhibit 2-8 summarizes visitation to other popular natural/cultural attractions in the region. The exhibit indicates that mixed growth patterns for several other popular outdoor attractions in the region.

**Exhibit 2-8. Annual Visitation to Other Regional Attractions, 2009-2013**

	Red Rock Canyon NCA	Valley of Fire SP	Spring Mountain Ranch SP	Lost City Museum	Clark County Heritage Museum	Old Las Vegas Mormon Fort SHP	Black Rock Desert Emigrant Trails NCA
<b>2009</b>	772,657	453,134	193,613	n/a	37,215	9,744	99,334
<b>2010</b>	944,377	462,120	179,627	11,086	33,525	12,214	107,311
<b>2011</b>	991,797	451,384	171,426	10,557	35,623	12,058	110,772
<b>2012</b>	952,723	461,329	191,017	9,624	31,422	10,901	154,977
<b>2013</b>	1,016,802	505,478	218,170	9,447	48,105	11,442	116,857
<b>Average</b>	<b>935,671</b>	<b>466,689</b>	<b>190,771</b>	<b>10,179</b>	<b>37,178</b>	<b>11,272</b>	<b>117,850</b>
<b>CAGR</b>	<b>7.1%</b>	<b>2.8%</b>	<b>3.0%</b>	<b>-5.2%</b>	<b>6.6%</b>	<b>4.1%</b>	<b>4.1%</b>

Source: BLM; Nevada State Parks; Bureau of Reclamation; Lost City Museum; Clark County Heritage Museum.

### ***Red Rock Canyon National Conservation Area***

Red Rock Canyon NCA consists of over 197,000 acres of protected lands managed by BLM and lies approximately 17 miles west of central (downtown) Las Vegas. The site provides visitors with an opportunity to experience the Mojave Desert and offers an array of outdoor recreation activities, including hiking, bike riding, equestrian uses, rock climbing, picnicking, camping, and other activities. Exhibit 2-8 indicates that visitation has steadily increased to Red Rock Canyon in each year over the last 5 years (2009-2013) with the exception of 2012, when visitation declined by 3.9%. Visitation to Red Rock Canyon has increased at an average annual rate of 7.1% over the last 5 years, reaching a peak visitation level of nearly 1.02 million visitors in 2013.

BLM reports that growth in Red Rock Canyon NCA over the last 5 years may be partly due to the effects of the 2008 recession, in that more budget-conscious vacationers are taking trips closer to home. In addition, budget-conscious travelers may be seeking ways to participate in less expensive recreation activities, including outdoor recreation activities, such as hiking, trail running, and biking. The growth in visitation to Red Rock Canyon is likely associated, at least in part, with steady growth in Las Vegas visitation during the last 5 years.

Although Red Rock Canyon NCA is located close to Sloan Canyon NCA and is also managed by BLM, the site is much more developed in terms of visitor facilities/amenities compared with existing and planned facilities/amenities at Sloan Canyon. Red Rock has a large visitor center with indoor-outdoor spaces offering information on the site, interpretive exhibits, a classroom, restrooms, and a gift shop. Red Rock Canyon also has the 13-Mile Scenic Drive, a one-way loop road which is very popular, offering sweeping views of desert landscapes and rock formations. The Scenic Drive also provides direct and convenient access to trailheads and also is popular among bicyclists and joggers. Red Rock Canyon also offers more recreation opportunities and facilities than Sloan Canyon, including very popular rock climbing sites, multiple picnic areas, a

developed campground consisting of nearly 80 campsites (including individual and group sites), a wide range of guided hikes, paved/unpaved biking trail access, and off-highway vehicle (OHV) use areas. Petroglyphs are also available onsite and are accessible to visitors. The current standard amenity fee at Red Rock Canyon is \$7.00 per vehicle and \$3.00 for bicycles, motorcycles, and pedestrians. The Red Rock annual pass is \$30.00 while the America the Beautiful (ATB) annual pass is \$80.00. Because of its broad range of visitor activities and facilities/amenities, easy access from Las Vegas, and established reputation as a popular regional attraction, Red Rock Canyon NCA has significantly higher annual visitation levels than Sloan Canyon NCA. The level of development proposed at Sloan Canyon NCA is less than that at Red Rock Canyon NCA due in part to Sloan having much lower current and projected future visitation levels and considering the resource protection and wilderness objectives specified in the Sloan Canyon RMP.

### ***Valley of Fire State Park***

Valley of Fire SP consists of approximately 42,000 acres of desert wilderness and is located approximately 55 miles (or a 1-hour drive) northeast of Las Vegas, significantly farther than Red Rock Canyon NCA and somewhat farther than Sloan Canyon NCA. Popular visitor activities include hiking, camping, picnicking, and photography. Petroglyphs are also available onsite and are accessible to visitors. The current entrance fee at Valley of Fire SP is \$10.00 per vehicle. Similar to Red Rock Canyon NCA, Valley of Fire SP offers a greater range of visitor facilities/amenities compared with those planned for Sloan Canyon NCA. Visitor facilities/amenities onsite include a large visitor center offering a range of interpretive information/exhibits; restrooms; a book/gift shop; and two developed campgrounds offering 72 sites, including RV hookups, and multiple picnic sites. Valley of Fire has experienced small to moderate inter-year fluctuations in visitation over the last 5 years (2009-2013), with average annual visitation growth increasing at an average annual rate of 2.8% per year over the period. Visitation to Valley of Fire SP increased by 9.6% in 2013, to the highest level achieved over the last 5 years. The availability of a greater range of easily accessible activities, facilities/amenities, as well as an established reputation as a regional attraction, is expected to result in annual visitation levels that are significantly higher than annual visitation levels at Sloan Canyon NCA.

### ***Spring Mountain Ranch State Park***

Spring Mountain Ranch SP consists of a 520-acre historic ranch property located just south of Red Rock Canyon NCA and roughly 15 miles west of Las Vegas. The site offers a visitor center with interpretive information, hiking trails, equestrian access, picnic areas, and guided and self-guided tours of the historic ranch house. The current entrance fee for this site is \$9.00 per vehicle. Spring Mountain Ranch SP has experienced steady increases in visitation over the last 3 years (2011-2013)—from 171,426 visitors in 2011 to 218,170 visitors in 2013, or a total increase of 27.3% during this period.

### ***Lost City Museum***

The Lost City Museum in Overton, Nevada, focuses on the ancient Anasazi culture and dwellings at this site, including interpretive exhibits displaying artifacts and information regarding Anasazi and other Native American cultures that have inhabited the area. Although Exhibit 2-8 indicates that museum visitation has steadily declined from 11,086 in 2010 to 9,447 in 2013, or at an average rate of 5.2% per year, at least some (if not most) of the decline is due to the museum reducing its operating times from 7 days per week to 4 days per week in 2009, which was partly due to budgetary constraints during the 2008 recession. However, the Lost City Museum resumed its schedule of 7 days per week as of July 2013, and visitation for fiscal year 2014 has increased to 14,460 visitors, the highest level over the last 5 years.

### ***Clark County Heritage Museum***

The Heritage Museum is located in Henderson and is operated by the Clark County Department of Parks and Recreation. The museum is open daily from 9:00 a.m. to 4:30 p.m. year-round and has a general admission price of \$2.00. The museum is located on a 30-acre site that features various cultural exhibits, including a timeline exhibit for southern Nevada from prehistoric to present times. The Heritage Museum also includes a collection of historic buildings that present daily life from different eras in Las Vegas, Boulder City, and Henderson. Visitation to the museum has fluctuated over the last 5 years, ranging between 31,422 and 48,105 visitors per year. Visitation increased significantly in 2013 by 53.1%, possibly due to an expansion in the Heritage Museum's operating hours/days in 2013.

### ***Old Las Vegas Mormon Fort State Historic Park***

This SHP contains the remains of the original Mormon Fort and settlement in downtown Las Vegas, and represents the first nonnative settlement of the area. An onsite visitor center provides exhibits on the history of the site, including historic artifacts and interpretive information. The Park is open year-round from 8:00 AM to 4:30 PM, Tuesday through Saturday. The Park experienced a steady decline in visitation during the period of 2010 to 2012, yet visitation rebounded by 5.0% in 2013.

### ***Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area ("Black Rock Desert NCA")***

Black Rock Desert NCA is one of three NCAs in Nevada, which also include Sloan Canyon and Red Rock Canyon NCA. The site consists of approximately 1.2 million acres of public lands located within a remote area of northwestern Nevada. The BLM reports there are virtually no facilities whatsoever within NCA. Outdoor recreation opportunities include hiking, mountain biking, wildlife viewing, and horseback riding. However, access roads are generally limited to high, clearance four wheel drive vehicles. The NCA is located approximately 150 miles north of (or a 3-hour drive from) Reno. BLM reports visitation to the Black Rock Desert NCA increased

steadily during the period 2009-2012 at an average annual rate of 16.0%. However, visitation declined sharply by nearly 25% in 2013. Over the last five years, visitation has increased at an average annual rate of 4.1% per year.

In summary, outdoor recreation sites within the region offering similar types of recreation activities and interpretive opportunities available at Sloan Canyon NCA have generally experienced stable if not increasing levels of annual visitation during the last five years (2009-2013). These positive trends in outdoor recreation have positive implications for future visitation to Sloan Canyon NCA as well.

### **Visitation to Desert Petroglyph Sites**

This section presents information regarding visitation to other desert petroglyph sites in the western United States. Visitation levels at other petroglyph sites provide some idea regarding the future visitation potential to the Petroglyph Management Area of Sloan Canyon NCA after access improvements (namely road improvements) are made. There are many factors affecting visitation to these sites, including remoteness, ease of access to the site, walking distances/trip times to petroglyphs, weather/topographical constraints, and other factors.

This report recognizes that there are many other areas in the region that contain petroglyphs other than those considered or identified in this analysis. However, BLM sites that offer areas with concentrated petroglyphs were identified as comparable as these sites are judged to most similar to the Petroglyph Management Area within the NCA (i.e. visitors primarily travel to these sites to view petroglyphs).

Exhibit 2-9 reveals that annual visitation to petroglyph sites which track (or estimate) visitation ranges between a low of around 1,800 visitors at BLM-managed petroglyph sites in Lincoln County to a high of 115,000 visitors at Petroglyph National Monument (NM) operated by the National Park Service just outside of Albuquerque, New Mexico. Average annual visitation for all ten sites providing information was nearly 23,400 visitors. However, after eliminating the very high visitation to Petroglyph NM, the average annual visitation for all other sites falls to approximately 13,300 visitors.

**Exhibit 2-9. Visitation to Desert Petroglyph Sites in the Western United States**

	Average Annual Visitation to Petroglyph Area <sup>1</sup>
<b>NEVADA SITES</b>	
Red Rock NCA (BLM)	n/a
Valley of Fire SP (State)	n/a
Lagomarsino Canyon Petroglyph Site (County)	2,000
Grimes Point Petroglyph Site (BLM)	15,000
Petroglyph Sites in Lincoln County (BLM)	1,800

	Average Annual Visitation to Petroglyph Area <sup>1</sup>
Grapevine Canyon Lake Mead NCA (NPS)	n/a
Arrow Canyon Wilderness (BLM)	n/a
<b>ARIZONA SITES</b>	
Painted Rock Petroglyph Site (BLM)	9,900
V-Bar-V Ranch Petroglyph Site (USFS)	12,000
<b>UTAH SITES</b>	
Little Black Mountain Petroglyph Site (BLM)	5,000
Parowan Gap Petroglyph Site (BLM)	47,000
<b>NEW MEXICO</b>	
Three Rivers Petroglyph Site (BLM)	16,500
Petroglyph National Monument (NPS)	115,000
La Cieneguilla Petroglyph Site (BLM)	n/a
Crow Canyon Petroglyph Site (BLM)	n/a
<b>WYOMING</b>	
White Mountain Petroglyph Site (BLM)	10,300
La Barge Bluffs Petroglyph Site (BLM)	n/a

<sup>1</sup> BLM and State Park staff reported that although petroglyphs are available onsite at each of these units, there is no breakout of annual visitation to these petroglyph sites specifically. Therefore, average annual visitation for those sites is listed as “not available (n/a)” in this column.

The following summarizes general characteristics for the petroglyph sites presented in Exhibit 9 for which visitation data was provided.

### ***Lagomarsino Canyon Petroglyph Site***

This site is located approximately 20 miles east of Reno via Interstate 80, and is situated on county-owned land. The Nevada Rock Art Foundation estimates visitation to be approximately 2,000 visitors per year. Visitors must access the site utilizing 11 miles of very poor, undeveloped roads resulting in a one way travel time to the site of approximately one hour and twenty minutes from the turnoff of the main paved road. However, once visitors arrive onsite, minimal hiking/walking is required to access the petroglyphs, as they are located near the pull-off areas where visitors park. In addition, the Rock Art Foundation reports the site is difficult to find, as there is virtually no signage or directional information available. The site is generally accessible year-round and there is no entrance or other fees charged. However, the site is not actively managed and there are no facilities or staff available onsite. In addition, no regularly scheduled guided hikes are available at this site.

### ***Grimes Point Petroglyph Site (Nevada)***

This site is managed by the BLM yet co-located at a state highway rest area along Highway 50 East, 12 miles east of Fallon, Nevada. BLM staff indicated that perhaps 25% of visitation consists

of locals who hike and/or walk their dogs onsite while all other visitors are nonlocals traveling through the area seeking historical/cultural attractions in the region. There is no fee to access the site and there are no guided hikes offered onsite, either by BLM or partners. The walking distance to the petroglyphs is around 50 yards and is less than a five minute walk. BLM reports that there are approximately 200 petroglyphs onsite in the main viewing area. Facilities available onsite include paved parking, vault toilets, shaded picnic tables, trash collection, and interpretive panels. The site is open to the public year-round, yet is unstaffed. The site is reported to receive around 15,000 visitors annually. The relatively high visitation at this site likely results from easy access from Highway 50, good signage directing visitors to the site, co-location next to highway rest area, and short walking distance and easy access to the petroglyph viewing area.

### ***Petroglyph Sites in Lincoln County (Nevada)***

BLM manages a number of different sites in Lincoln County, Nevada, offering petroglyphs, located approximately 140 miles north of Las Vegas. These sites include: Oak Springs, Ash Springs, White River Narrows, Mount Irish, Crystal Wash, Shooting Gallery, and other sites which are scattered over relatively remote areas within Lincoln County and offer virtually no facilities or amenities. There is no fee to access any of the sites and they are open year-round. The sites are also promoted by the Lincoln County Rock Art Guide, which provides information on locations, amenities, access, etc., for each of these sites. The remoteness, lack of facilities/amenities, and in some cases difficult access, explains the very low visitation of approximately 1,800 visitors per year.

### ***Painted Rock Petroglyph Site***

This site is operated by the BLM and is located approximately 94 miles southwest of (or a nearly 2-hour drive from) Phoenix, Arizona, offering good access from Interstate 8 and paved roads up to the main parking area. The site is open year-round, and offers paved parking, vault toilets, picnic tables, and interpretive displays and is staffed by 1 to 2 volunteers during the peak season. There is a \$2.00 vehicle entry fee. The walking distance to the petroglyphs from the parking area is approximately 50 yards, which is shorter than the distance to the petroglyphs at Sloan Canyon which are approximately 0.25 mile from the proposed location of the contact station. This site offers similar levels of access/facilities planned for the Sloan Canyon but is more remotely located. Average annual visitation is nearly 10,000 visitors.

### ***V-Bar V-Ranch Petroglyph Site***

This site is operated by the U.S. Forest Service (USFS) and is located approximately 45 miles (or 48 min drive) south of Flagstaff and 19 miles east of Sedona. There is good access to the site from Interstate 17. The site is only open Friday through Monday, from 9:30 AM to 3:00 PM year-round, and offers paved entrance roads, gravel parking, a 1,400-square-foot contact

station with restrooms and bookstore/gift shop operated by Arizona Natural History Association, picnic tables, trash, drinking water, interpretive displays and is staffed by volunteers. There is a \$5.00 vehicle entry fee. The walking distance to the Petroglyphs is 0.5 mile, somewhat shorter than at Sloan Canyon. This site also offers similar levels of access/facilities planned for the NCA, yet is in a somewhat more remote location. Average annual visitation is 12,000 visitors.

### ***Little Black Mountain Petroglyph Site***

This site is operated by the BLM and is located 12 miles (or a 30-minute drive) south of St. George, Utah. Site access is relatively poor and visitors must travel 5 miles on unimproved gravel roads to access site. However, once onsite the petroglyphs are only 300 feet from the parking area. Vault toilets, interpretive panels, gravel parking, and sheltered picnic tables are available onsite. All facilities and areas are unstaffed. The site is open year-round and is free to the public. Average annual visitation is reported to be approximately 5,000 visitors. In general, the access limitations and general remoteness of the area appear to explain the relatively low visitation at this site.

### ***Parowan Gap Petroglyph Site***

This site is operated by the BLM and is located 20 miles (or a 30-minute drive) north of Cedar City, Utah, in a fairly remote location. In 2014, new visitor facility improvements were made, including new restrooms, paved trails, interpretive panels, and other trail improvements. Access to this site is fair, with limited signage and access via a moderate distance of unimproved dirt/gravel roads. The site is free of charge and is open year-round. The BLM reports annual visitation to be 47,000 visitors, which appears very high for this relatively remote location and limited access.

### ***Three Rivers Petroglyph Site***

This site is operated by BLM and lies within a very remote location of New Mexico. However, there is good access to the site from U.S. Highway 54, with mostly paved roads leading to the site. The closest town is Alamogordo, New Mexico, located approximately 35 miles (or a 45-minute drive) south. The distance from the main parking area to the petroglyphs is 0.25 mile, the same as at Sloan Canyon. Facilities onsite include a small 300-square-foot contact station, picnic tables, flush toilets, potable water, and interpretive information. There is a \$5.00 vehicle entry fee at this site. The site is typically staffed by two volunteers 6 days per week. The facilities and access at this site are very similar to what is planned at Sloan Canyon. However, Three Rivers is much more remotely located than Sloan Canyon. The BLM reports average annual visitation to be nearly 17,000 visitors.

### ***White Mountain Petroglyph Site***

This site is operated by the BLM and is located approximately 26 miles north of Rock Springs, Wyoming. The site lies within a remote location and there are very limited facilities onsite. Visitors appear to be required to travel on dirt roads and unimproved roads requiring high clearance at times. The site is open year-round and there is no fee to access the site. There are no staff onsite. Visitation for is reported to be 10,300 visitors per year.

### ***Petroglyph National Monument***

This site is operated by the National Park Service and lies directly adjacent to the western boundary of the City of Albuquerque, New Mexico. Access to the site is excellent, including convenient access from Interstate 40. Residential neighborhoods lie just outside the boundary of the National Monument, similar to what will ultimately be the case at Sloan Canyon when West Henderson is fully built-out. There is a medium-size staffed visitor center onsite offering interpretive information, maps/brochures, restrooms, water, and other amenities. Cell phone tours and Ranger led interpretive programs are available as well. Multiple hiking trails and petroglyph viewing areas are available within the site. There is no entrance fee, yet there is a \$1.00 (weekdays) to \$2.00 (weekends) parking fee charged for parking at Boca Negra Canyon. The site is open year-round but closes daily at 5:00 p.m. Visitation to Petroglyph NM of approximately 115,000 visitors per year is expected to exceed Sloan Canyon, since this national monument has established name recognition among domestic and international visitors. Furthermore, NPS park units actively seek to promote recreation visitation to their sites and typically offer a greater level of visitor amenities than are often available at BLM or USFS sites.

In summary, the three petroglyph sites that are judged to be most comparable to the access and level of facilities/amenities planned for Sloan Canyon NCA are Painted Rock Petroglyph Site, V-Bar V-Ranch Petroglyph Site, and Three Rivers Petroglyph Site which experience visitation ranging between approximately 10,000 and 17,000 visitors per year. However, these sites are more remotely located compared to Sloan Canyon, which is located a relatively short distance from Las Vegas, a major tourism center, and which is also located next to the large community of Henderson. In the future, Sloan Canyon will also be accessible from Interstate 15, a route that is highly popular with tourism visitors traveling to recreation destinations in Nevada and California. For these reasons, annual visitation to Sloan Canyon would be higher than these sites and estimate annual visitation to Petroglyph Canyon to be 20,000 visitors per year after access/facility improvements are completed.

## **C. VISITATION PROJECTIONS FOR SLOAN CANYON NATIONAL CONSERVATION AREA**

This section details the approach used to forecast visitation over a 30-year period. Future visitation to Sloan Canyon NCA will be comprised of two major components:

- Trail-use visitation, primarily by local residents
- Visitation to the Petroglyph Management Area, including a mix of local and nonlocal visitors

The following subsections discuss the methodologies used to project visitation for each of the two major components of annual visitation and present the annual visitation projections over a 30-year period.

### Trail-Use Visitation

As noted in Section A, most visitors access the NCA through trailheads located in the northern/northeastern region of the NCA, including the Shadow Canyon, Anthem East, and McCullough Hills access points. Hidden Valley, Petroglyph Canyon, Dutchman Pass, and Quo Vadis access points all have significantly lower visitation levels partly because of their limited access, including undeveloped roads, remote locations, and lack of signage.

Projections are based on the following assumptions

regarding current and future changes in trail-use visitation:

- Shadow Canyon, Anthem East, and McCullough Hills will remain the primary visitation access points to the NCA in the future. Visitation at these three access points will be driven by local users seeking outdoor recreation opportunities, including walking/hiking, trail running, biking, dog walking, nature viewing, etc. This use pattern is expected to generate a high level of repeat visitation.
- Trailhead improvements proposed in the RMP for Hidden Valley, Dutchman Pass, and Quo Vadis, consisting of a parking lot, equestrian staging area, interpretive kiosk, and vault toilets, are not expected to generate significant additional visitation at these locations, for the following reasons:
  - Hidden Valley and Quo Vadis are much more remote and difficult to access by the existing undeveloped roads compared to other access points. Developing these limited facilities will not change these access limitations. Even with road improvements, these sites are sufficiently remote that such improvements would still not generate significant additional levels of visitation, particularly when there are more conveniently located access points in other areas of the NCA. Therefore,



Hiking in the Sloan Canyon NCA

future visitation levels are projected to be similar to historical levels for these access points.

- Dutchman Pass is much more accessible; however, the McCullough Hills access point is fully developed and is located only 1.3 miles north (or a 4-minute drive) of the proposed Dutchman Pass trailhead location. Developing the Dutchman Pass location would likely split visitation to Mission Drive, as visitors residing closer to Dutchman Pass would utilize it instead of Mission Drive. This would redistribute visitation, yet is not expected to generate additional visitation. Therefore, no adjustment to our visitation projections was made due to the development of this access point.
- Trail-use visitation will likely increase at the rate of local population growth in the area where the trailhead is located. Therefore, the City of Henderson's population projections by ZIP code were used to project trail-use visitation over a 30-year period. Adjusted populations estimates and growth rates were taken from the West Henderson Land Use Plan Update to account for the West Henderson developments which will expand housing and increase the local population, impacting trail-use visitation in the northern/northeastern area of the NCA.
- It is assumed that the projected annual visitation average of approximately 77,800 visitors presented in Exhibit 2-13 is representative of 2015 visitation to Sloan Canyon NCA. Therefore, this visitation level was used as the base year (2015) visitation in making projections.

Exhibit 2-10 presents 2015 NCA visitation by access point, the corresponding ZIP codes in which the access point is located, 2015 and 2044 population projections within each ZIP code, and the average annual population growth rates (over the 30-year period of 2015 to 2044) used to forecast NCA visitation by access point.

**Exhibit 2-10. Population Growth Rates Used to Forecast Trail-Use Visitation**

	2015 NCA Visitation	ZIP Code	2015 ZIP Population	2044 ZIP Population	Ave. Annual Pop. Growth
Shadow Canyon	32,753	89044	22,160	83,012	4.7%
Anthem East	27,048	89052	50,964	59,063	0.5%
McCullough Hills	13,819	89002	32,165	49,167	1.5%
Petroglyph Canyon*	1,723	89044	22,160	83,012	4.7%
Quo Vadis	957	89052	50,964	59,063	0.5%
Dutchman Pass	828	89002	32,165	49,167	1.5%
Hidden Valley	699	89044	22,160	83,012	4.7%
<b>TOTAL</b>	<b>77,827</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

\* Visitation to Petroglyph Canyon is projected separately in Section D of this chapter.

Note the sizeable population growth for ZIP code 89044 is due to the expansion of the West Henderson area currently under way, with future housing developments that will ultimately border the northern section of the NCA.

Exhibit 2-11 summarizes total projected annual trail-use visitation to the NCA for all access points, excluding the Petroglyph Management Area (which is projected in following subsection), over the 30-year period of 2015 to 2044.

The exhibit indicates that the NCA is projected to experience sizeable increases in annual trail use as the populations of the surrounding communities expand over time. The current trail-use visitation to the NCA is projected to double by 2041.

**Exhibit 2-11. Projected Trail-Use Visitation, 2015-2044**

Year	Trail Use Visitors	Year	Trail Use Visitors	Year	Trail Use Visitors
2015	76,100	2025	97,300	2035	129,400
2016	77,900	2026	99,900	2036	133,500
2017	79,700	2027	102,600	2037	137,700
2018	81,600	2028	105,500	2038	142,100
2019	83,500	2029	108,500	2039	146,700
2020	85,600	2030	111,600	2040	151,500
2021	87,700	2031	114,900	2041	156,500
2022	90,000	2032	118,300	2042	161,700
2023	92,300	2033	121,900	2043	167,200
2024	94,700	2034	125,600	2044	172,900

#### **D. VISITATION PROJECTIONS FOR PETROGLYPH MANAGEMENT AREA**

Our projections of visitation to the Petroglyph Management Area are based on the following judgments, assuming the facility and access improvements proposed at this site are constructed:

- As discussed in the preceding section, visitation to other desert petroglyph sites in the western United States ranged between 1,800 and 115,000 visitors per year. However, most BLM or USFS operated petroglyph sites experienced visitation ranging between 5,000 and 16,500 visitors per year, with Parowan Gap Petroglyph Site in Utah (a BLM site) experiencing substantially higher visitation of 47,000 visitors annually.
- Based on locational factors, onsite facilities, and access, the V-Bar-V Ranch, Painted Rocks, and Three Rivers Petroglyph Sites (discussed in the preceding section) represent the most comparable petroglyph sites to Sloan Canyon NCA. These three sites report annual visitation between nearly 10,000 and 17,000 visitors annually. However, all three sites are not as closely located to major urban areas as is the NCA. Due to the closer

proximity of the NCA to Las Vegas/Henderson, which is a major tourism center, will generate visitation levels above the upper bound of this range. This observation was verified by the Nevada Rock Art Foundation (who is very familiar with Sloan Canyon) as being a reasonable and achievable annual visitation level.

- Our visitation projections assume that 60% of visitation to Petroglyph Canyon would be nonlocal visitors that are representative of the greater regional tourism market (i.e. out-of-area visitors traveling to various outdoor/cultural recreation sites in the region) and 40% would be local visitors. These visitation shares are based on an understanding of the regional tourism market, analyzing visitation patterns at other outdoor recreation sites, and inputs obtained regarding the level of local versus nonlocal visitation at other petroglyph sites. However, due to these assumptions, local visitation share could potentially be lower, depending on how locals choose to use improved access/facilities in the Petroglyph Management Area in the face of competing access points elsewhere in the NCA. Visitation by nonlocals will be influenced by outreach and marketing efforts to inform the public, including nonlocal tourism visitors of the outdoor recreation resources available at Sloan Canyon.
- It is projected that visitation to Petroglyph Canyon will increase at different rates for local versus nonlocal visitors. Specifically, we estimate nonlocal visitation to trend with the overall growth in Las Vegas tourism visitation, which has increased at an average annual rate of 0.7% during the last 10 years. With a slightly higher annual growth rate of 1.0% to project nonlocal visitation. It is projected that local visitation will trend with population growth for the surrounding community of West Henderson, estimated to be 4.7% per year.
- Visitation projections take into consideration the carrying capacity limits stated in the RMP, as described below:
  - **Weekends.** The RMP states that “visitors must join a BLM-sponsored tour” to access the Petroglyph Management Area on weekends. The RMP states that “no more than one guided group of no more than 20 people are allowed in the Petroglyph Management Area at one time.” Assuming a 9-hour operating day, an average roundtrip travel time of 3 hours, the limit of 20 visitors per group, and assuming (as the RMP suggests) that two groups cannot be in the Canyon simultaneously, this translates to a *maximum allowable limit of 60 visitors per day or 6,240 visitors per year during weekend days.*
    - Historical visitation data to Petroglyph Canyon indicates approximately 50% of all visitors travel to the site on a weekend day (Saturdays and Sundays). We assume this same distribution of weekend visitation in our projections.
    - The high level of visitation on the weekends, combined with the visitation limits specified in the RMP, will have a moderate impact on limiting annual visitation to the Petroglyph Management Area, since it is projected that not all weekend

visitors can be accommodated. However, those visitors who were unable to visit the site on the weekends due to lack of capacity, could always opt to go on a weekday (as their time/schedules permitted) when visitation is less restricted per the RMP. This analysis conservatively assumes that weekend visitors who cannot be accommodated on weekend days do not redistribute to weekdays.

- As described in Chapter 5, this analysis assumes that the required guided hikes on the weekends would be provided by a private, for-profit or non-profit, operator using a Special Recreation Permit (SRP) and potentially using volunteer labor to provide the guide service. This assumes that the price for a basic guided weekend hike would be \$20.00 per visitor including an assumed \$5.00 Special Area fee (per visitor) paid directly to BLM (the guide service provider would receive \$15.00 per visitor). As an SRP holder, the guide service provider would be required to pay BLM 3.0% of the gross revenues generated from the service (see Chapter 5 Section A. Revenue Estimates for additional information). To account for the potential impacts to weekend visitation associated with the higher price to access Petroglyph Canyon on weekends, weekend visitation is reduced by 40%. This reduction reflects the share of visitors who might not be willing to pay the higher price of the guided hike service on weekends.
- **Weekdays.** The RMP states that during the weekdays “visitors may go to the Petroglyph Management Area unaccompanied by a BLM-sponsored guide if they obtain a permit” and that “a total of no more than 25 permits per hour will be issued for self-guided tours.” Assuming an 8-hour operating day and a maximum of 25 permits (i.e., visitors) per hour, this translates to a *maximum allowable limit of 200 visitors per day or 52,200 visitors per year during weekdays*. Historical visitation data to Petroglyph Canyon indicates approximately 50% of all visitors travel to the site on weekdays (Monday through Friday). We assume this same distribution of weekday visitation in our projections.
  - Based on the assumptions described above and the visitation limits specified in the RMP, we judge that all weekday visitation demand for the Petroglyph Management Area could be accommodated.
  - Considering the capacity limits on weekends, it is anticipated that virtually all future visitation growth to Petroglyph Management Area occurs on the weekdays.

Exhibit 2-12 summarizes projected visitation to Petroglyph Canyon over the 30-year period 2015 to 2044.

Exhibit 2-12 shows that prior to 2020, visitation is projected at current levels of approximately 2,000 visitors annually. Visitation more than triples in 2020 to 4,500 visitors due to the completion of access and facility improvements in the Petroglyph Management Area. After

2020, visitation steadily increases as the public becomes increasingly aware of the new access, facilities, and services available at the Petroglyph Management Area.

**Exhibit 2-12. Projected Visitation to Petroglyph Management Area, 2015-2044**

Year	Petroglyph MA Visitors	Year	Petroglyph MA Visitors	Year	Petroglyph MA Visitors
2015	1,700	2025	14,600	2035	18,700
2016	1,800	2026	15,000	2036	19,100
2017	1,900	2027	15,400	2037	19,600
2018	2,000	2028	15,700	2038	20,100
2019	2,100	2029	16,100	2039	20,600
2020	4,500	2030	16,500	2040	21,100
2021	9,100	2031	16,900	2041	21,600
2022	13,600	2032	17,300	2042	22,100
2023	13,900	2033	17,800	2043	22,700
2024	14,300	2034	18,200	2044	23,200

Exhibit 2-13 combines projected trail-use visitation and Petroglyph Management Area visitation to calculate the total projected annual visitation to Sloan Canyon NCA.

**Exhibit 2-13. Projected Total Annual Visitation to Sloan Canyon NCA, 2015-2044**

Year	All Visitors	Year	All Visitors	Year	All Visitors
2015	77,800	2025	111,900	2035	148,100
2016	79,700	2026	114,900	2036	152,600
2017	81,600	2027	118,000	2037	157,300
2018	83,600	2028	121,200	2038	162,200
2019	85,600	2029	124,600	2039	167,300
2020	90,100	2030	128,100	2040	172,600
2021	96,800	2031	131,800	2041	178,100
2022	103,600	2032	135,600	2042	183,800
2023	106,200	2033	139,700	2043	189,900
2024	109,000	2034	143,800	2044	196,100

Over the 30-year period of 2015 to 2044, Sloan Canyon NCA visitation is projected to more than double, from approximately 77,800 visitors in 2015 to nearly 200,000 visitors in 2044. For comparison, projected visitation to Sloan Canyon NCA in 2044 would only be approximately 20% of current visitation to Red Rock Canyon NCA. This level of visitation is achievable, given the proximity of the Sloan Canyon NCA to Las Vegas/Henderson, population growth in nearby communities, access improvements in the Petroglyph Management Area, visitation levels and trends at other popular outdoor/cultural attractions in the region, and visitation to other petroglyph sites.

## **CHAPTER 3**

### **PROPOSED FACILITY AND ACCESS DEVELOPMENT**

This chapter describes proposed improvements at Sloan Canyon NCA. The proposed improvements are based on the visitation projections described in Chapter 2 and are consistent with the 2006 RMP, the 2009 Trails Master Plan, and other applicable guidance as well as initial public input. Given the specific direction provided by the RMP and the Trails Master Plan, as well as input received from the public, ranges of facility development were not analyzed. Instead, a basic level of development was defined for each use area, which can be phased in response to visitation levels, infrastructure availability, and other considerations.

Proposed facilities at each of the sites identified in the RMP are described on a site-by-site basis below. Order of magnitude cost estimates for each scenario are presented later in this chapter, along with a discussion of phasing. Drawings contained in this chapter represent one of many possible design solutions and are for illustration only. Specific design would occur at subsequent stages of development based on a more detailed analysis.

#### **A. SITES**

##### **Petroglyph Canyon**

This area is the centerpiece of the NCA and one of the most significant cultural resource sites in southern Nevada. Protection of these sensitive resources, while providing for public use and enjoyment of the area, are paramount concerns. The need for a visitor contact station at this location has long been recognized as an essential element of any strategy to protect the area's cultural resources and manage visitation levels and activities. Figure 3-1 shows the current conditions of the entrance to the NCA at the Petroglyph Trailhead.



**Figure 3-1. Entrance to Petroglyph Canyon Area**

The Petroglyph Canyon entrance can be developed in two phases. Detailed site plans for each phase at the entry area itself are shown in Figures 3-3 and 3-4. The following summarizes the potential facilities provided in each phase, which are further described in this chapter. A specific listing of facilities and program elements is provided in the cost estimate tables presented in Appendix A.

Phase 1 items to be completed by 2020 would include:

- Visitor Contact Station Building
- Permanent Restroom
- Picnic Shelters and Tables
- Interpretative Signs/Exhibits
- Restoration & Trail Improvements

Phase 2 items to be completed by 2025 would include:

- Expanded Visitor Contact Station Building
- Loop Trail
- Overlook Pavilion
- Amphitheater and Outdoor Exhibits
- Additional Indoor Exhibits

An overall proposed site plan for the entry area to Petroglyph Canyon is shown in Figure 3-2. A key component of the proposed plan is extending an improved road from Democracy Road to the Petroglyph Canyon entry area. This road would be paved, 30 feet in width with gravel shoulders 3 feet in width. A separated 8-foot pathway would be developed adjacent to the road for walkers and bikers. The corridor along the entry road would be landscaped using native vegetation but enhanced with denser plantings and plant species selected for their attractive qualities. Since the public meeting was held on the development of the implementation strategy, the BLM is now proceeding with the construction of the entry road to Petroglyph Canyon, to be completed by early 2016. A temporary visitor contact station and parking will be placed at the end of the road and will be staffed by BLM and volunteers who will provide visitor services until the permanent facility is completed. The City of Henderson and Friends of Sloan Canyon are key partners in this initial effort.

Another key concept shown in the proposal is the integration of the West Henderson Plan, which provides an appropriate transition between urban development and the natural setting of Sloan Canyon. In part, this is accomplished by the development of a gateway park by the City of Henderson that would feature a blend of native vegetation and turf along with a play area designed to mimic the adventure play experiences available in the adjacent natural areas of the NCA. The gateway park could also serve as a staging area for those who want to walk or bike the 0.75 mile to the Petroglyph Canyon entrance area.

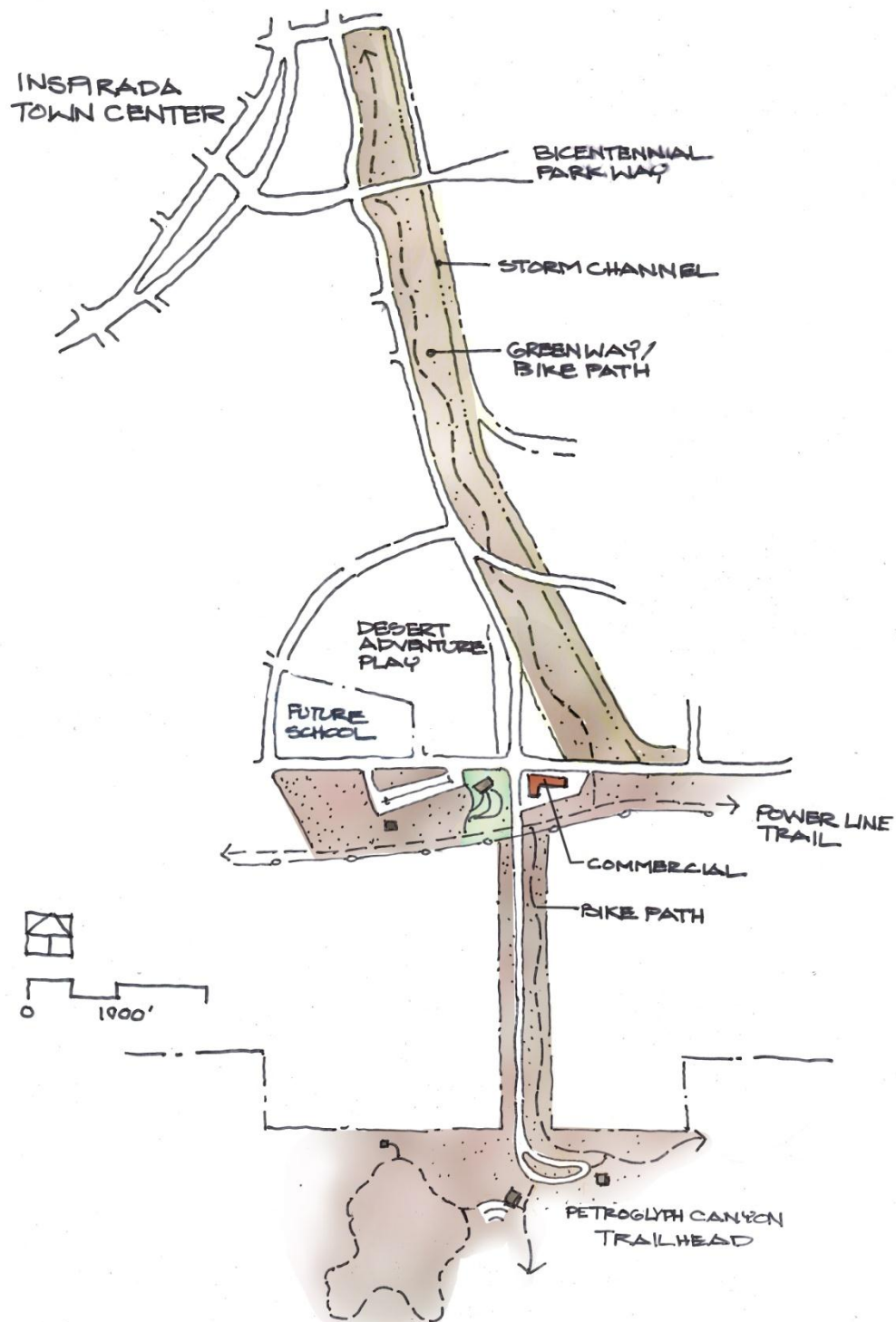
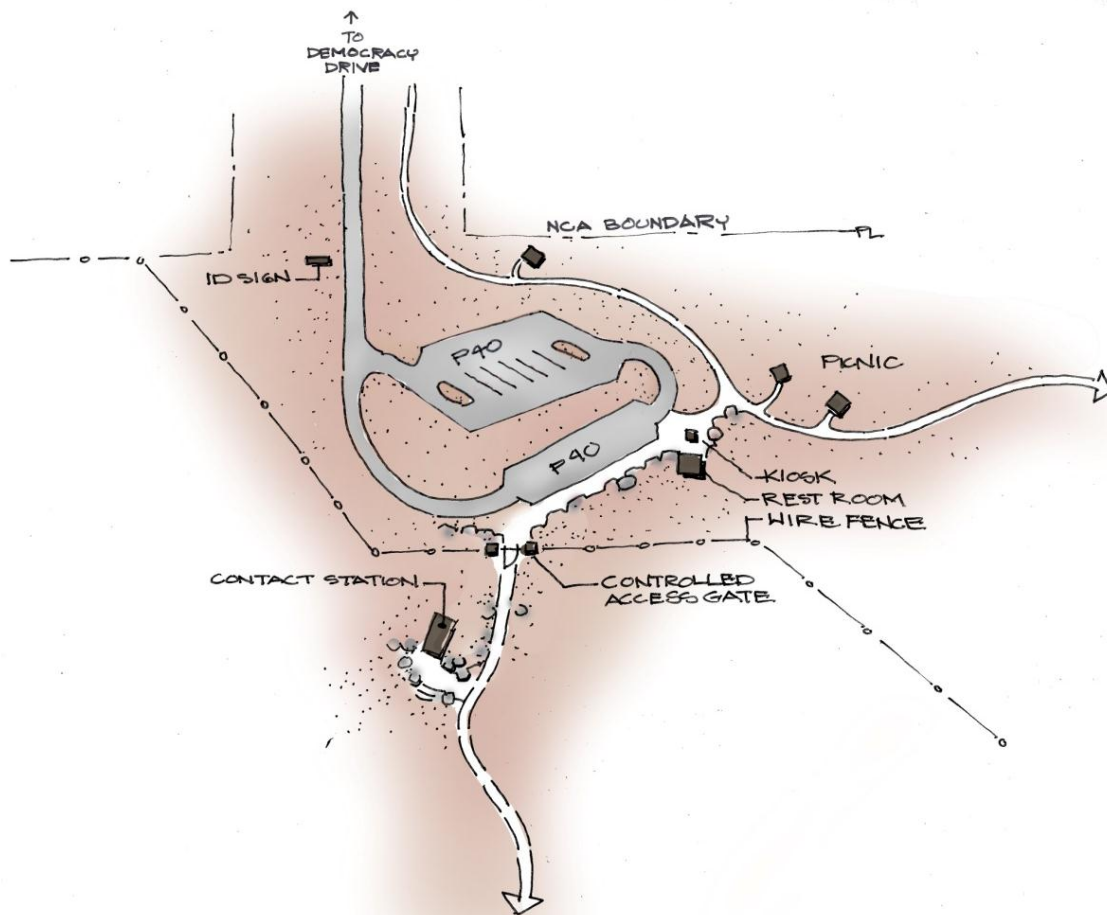


Figure 3-2. Entry Road to Petroglyph Canyon and Vicinity

As shown in Figure 3-3, the entry road would loop through the site and 80 parking spaces would be developed inside the loop. Further refinement of parking area layout and size would occur during the detailed design process; however, it is intended to be sized to accommodate the number of visitors allowed within the Petroglyph Management Area at any one time along with other visitors who may not visit Petroglyph Canyon but may come to see the exhibits, picnic, or use the area as a trailhead to access the 101 Trail extending to the east. For example, on weekends when groups of 20 are allowed within the petroglyph area at one time, a second group may be waiting for the opportunity to enter the area and occupying parking spaces while they wait. Similarly, weekdays allow multiple self-guided groups to visit the petroglyph management area with up to 25 permits issued per hour. At times of high demand, multiple groups of 25 will be in the area at one time, creating a need for 50-75 spaces depending on the number of persons per vehicle. Additional parking spaces would be needed for other visitors using the site as a trail head or using the picnic sites.

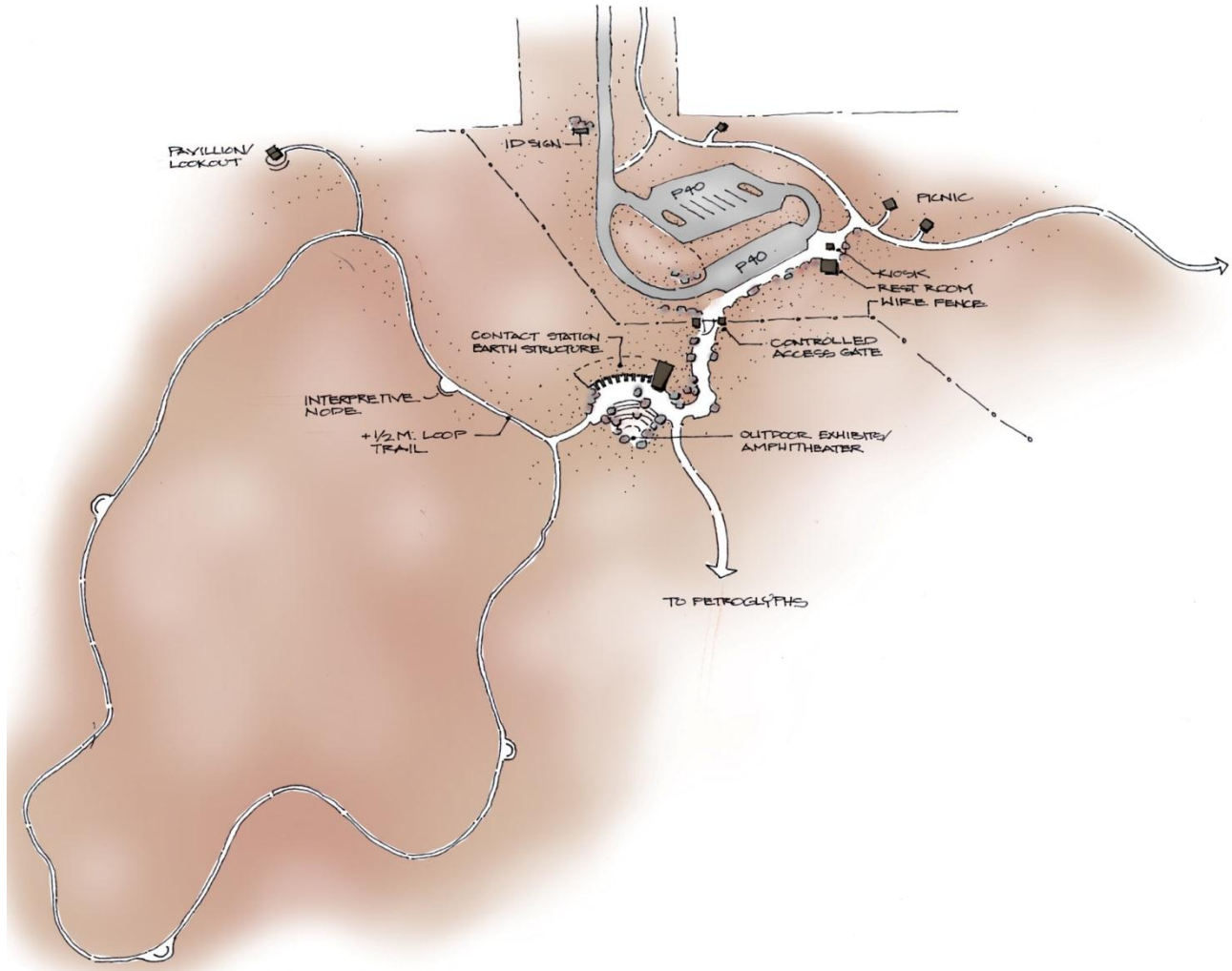


**Figure 3-3. Petroglyph Canyon Phase 1**

Other facilities near the parking areas include a restroom, information kiosk, and picnic shelters. A visitor contact station would also be developed, which would provide office space and a restroom. All visitors to the Petroglyph area would be required to check in at this building and information on visitor attractions and use regulations would be available. This building would be approximately 900 square feet in size. This amount of space would provide offices for 3-4 BLM staff, an entry hall with a visitor contact counter, a small amount of storage space for equipment, and restrooms for staff use. An informational kiosk would be placed in front of the building.

Utilities would be extended to the site, including electric service and a sewer connection. Water, however, would be provided either by development of a well on site or development of a cistern using delivered potable water. If development of a well proves to be infeasible, it may be necessary to develop a vault toilet due to the fact that the site is remote from a connection point to the municipal water system and would require costly improvements if developed in advance of water service being extended to the site vicinity.

An expanded visitor facility would be provided at a later date in Phase 2. The expanded facility would include an addition of approximately 1,600 square feet, which would result in a total building space of approximately 2,500 square feet. The expansion would be designed as an addition to the visitor contact station developed in Phase 1 and would support several additional uses, including indoor exhibits on the natural and cultural history of Sloan Canyon, a small auditorium for interpretive presentations and other events, indoor classrooms, and public restrooms. Small conferences and other educational events could be accommodated at the center. Figure 3-4 shows the site plan for an expanded visitor facility.



**Figure 3-4. Petroglyph Canyon Phase 2**

Near the contact/visitor facility an outdoor amphitheater would be developed that could accommodate approximately 140 visitors. The amphitheater would be used for interpretive presentations and other events. A series of outdoor exhibits, interpretive panels, and other features would be developed in the same area.

A footpath/trail would be developed for visitors to circulate from the parking area to the visitor contact building and other use areas.

An additional feature of the entry area would be a picnic area consisting of three shelters with tables. An overlook could also be developed to provide seating and shade, as well as a commanding view of the Las Vegas Valley and surrounding area.

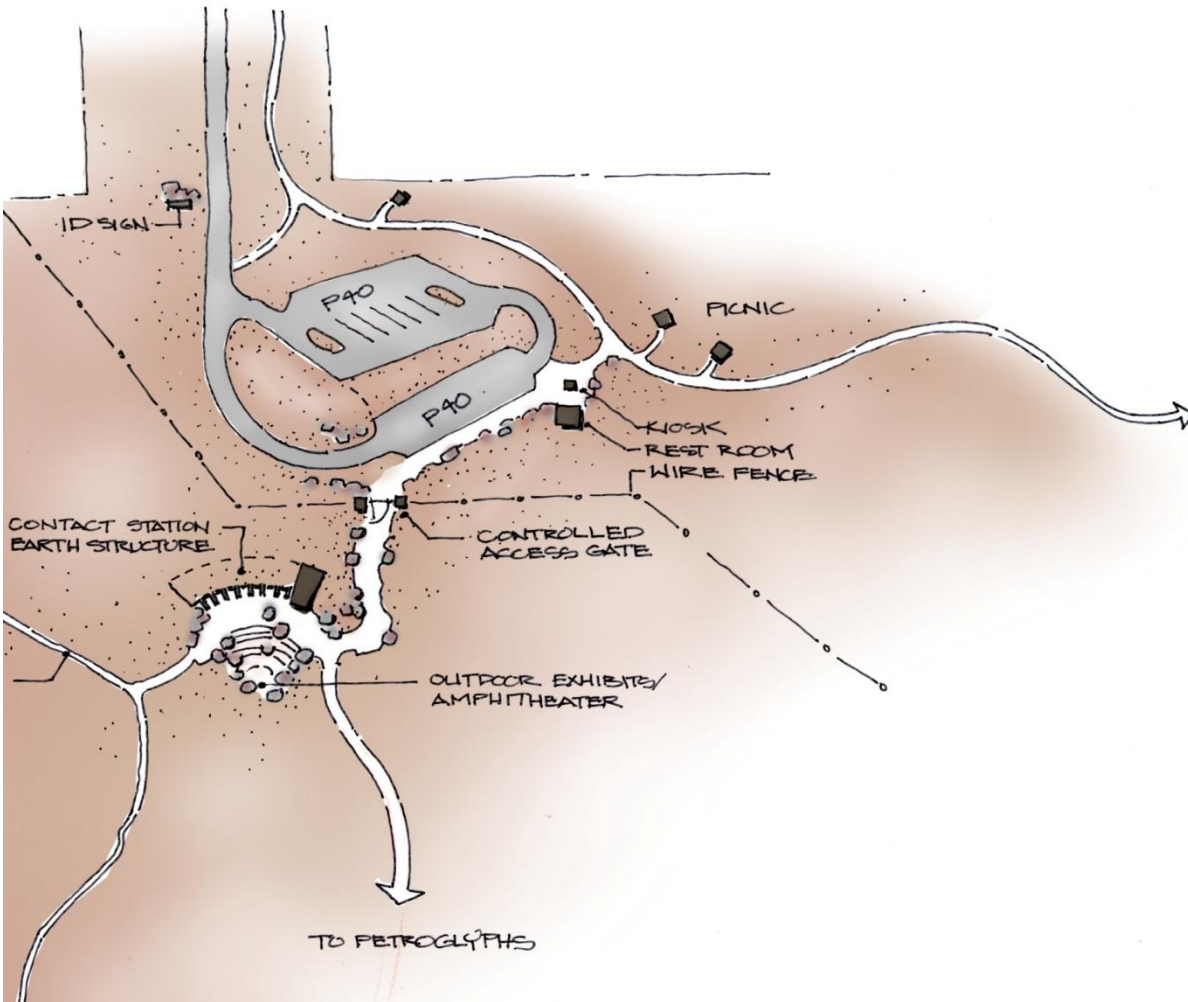


Figure 3-5. Petroglyph Canyon Phase 2 (Detail)

### ADDITIONAL DEVELOPMENTS

Although the following improvements are identified in the Resource Management Plan, actual construction of these facilities will be phased in in response to the increased visitation to the conservation area. Development for these potential trailhead facilities and road improvements will require subsequent analysis and planning under the National Environmental Policy Act (NEPA), which includes additional public involvement and an assessment of environmental, social, and recreational impacts. Based on current visitation projections, it is anticipated that these facilities may be needed by 2025.

## Hidden Valley

This site provides an important entry to the North McCullough Wilderness, one that will become increasingly important as visitation increases in Petroglyph Canyon and limits on the number of visitors allowed at one time are more frequently put in effect. The Hidden Valley Trailhead provides direct access to the North McCullough Wilderness without the need to travel through Petroglyph Canyon. A site plan for the area is shown in Figure 3-6. The plan provides for the development of 30 vehicle parking spaces, along with an equestrian staging area and four pull-through parking spaces for vehicles with trailers. Additional facilities include a picnic shelter, vault restroom, an informational kiosk, and signage.

Hidden Valley also provides an alternative route for accessing Petroglyph Canyon via the Hidden Valley Trail, which connects to the trails in the Petroglyph Management Area. In addition, various washes and routes from Hidden Valley lead into the North McCullough Wilderness. Although formal trails do not exist within most of the wilderness, the area is open to cross-county travel on foot and horseback.

In the long run, it may be necessary to improve the access road to Hidden Valley. No costs are included for this potential project.

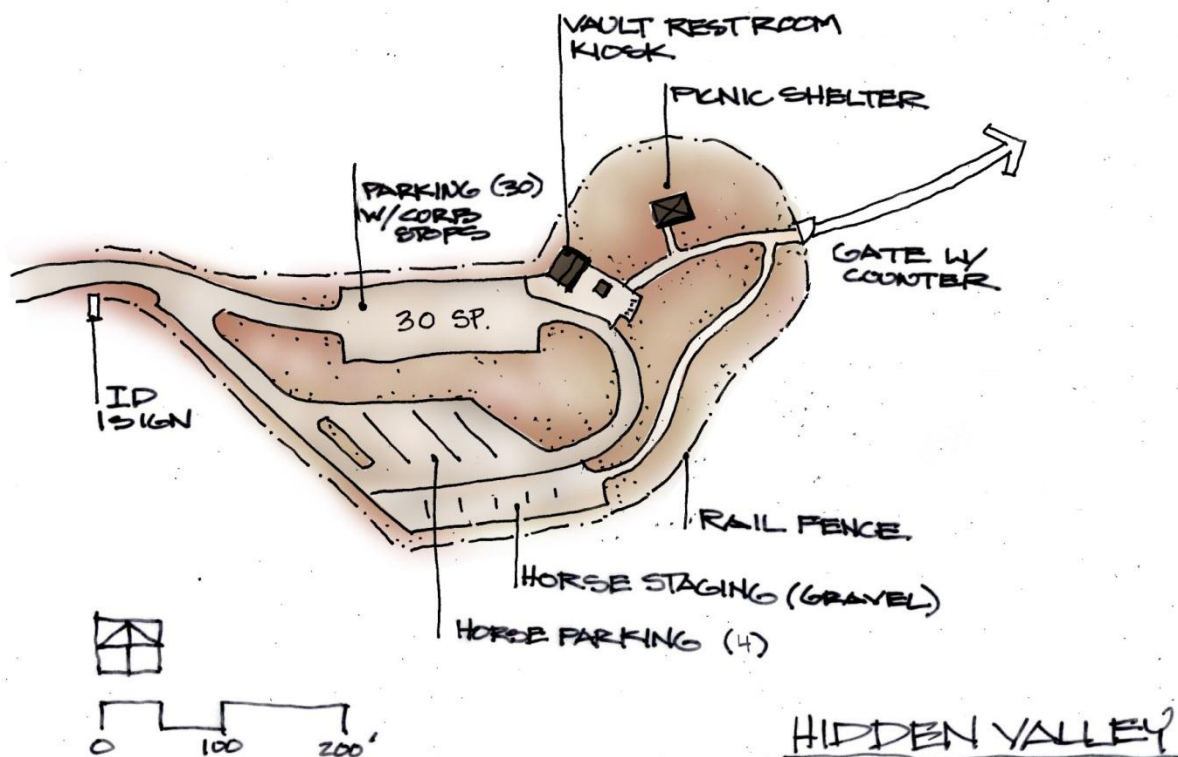


Figure 3-6 Hidden Valley Trailhead

## Dutchman Pass

This site is located approximately 1 mile south of the McCullough Hills Trailhead, which provides access to the McCullough Hills Trail and the multiuse trail system developed within the northeastern corner of the Sloan Canyon NCA. The site plan calls for similar facilities as those at the Hidden Valley Trailhead, including vehicle parking (30 spaces), four pull-through spaces for vehicles with trailers, a vault restroom, and picnic shelters. A small concrete plaza with bike racks would be developed adjacent to the picnic shelters. Directional signage and an information kiosk would also be included (Figure 3-7).

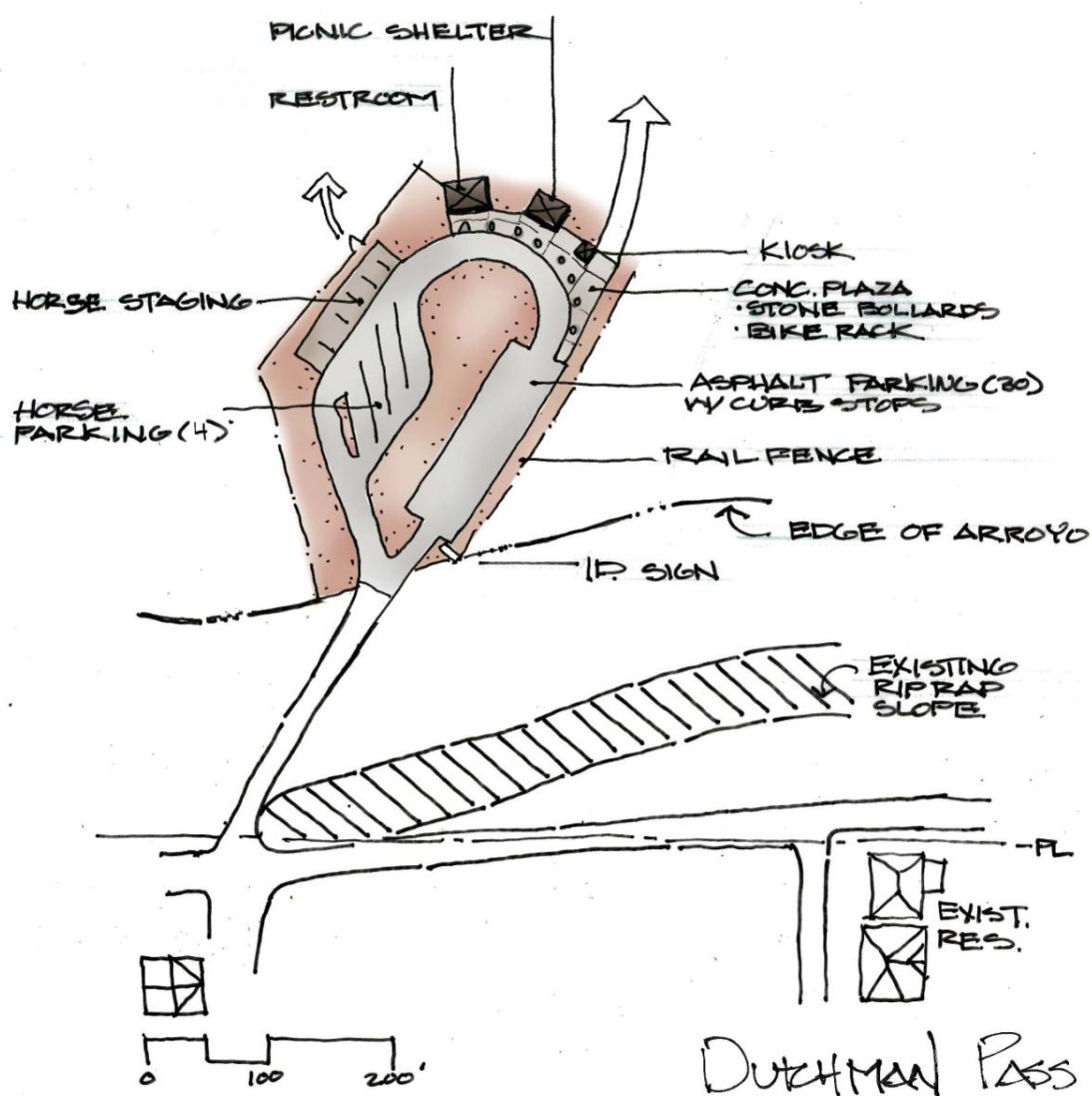


Figure 3-7 Dutchman Pass Trailhead

## Quo Vadis

Quo Vadis is an important access point for the trail system at the northeastern edge of the Sloan Canyon NCA and provides access to that portion of the NCA open to mountain bicycle use. The site plan for the area provides for the development of 30 vehicle parking spaces along with four pull-through spaces for vehicles with trailers. The trail system in this portion of the NCA is also intended for equestrian use. A staging area for equestrians is located adjacent to the pull-through spaces (Figure 3-8).

Additional facilities in this use area include a vault restroom and picnic shelter. An informational kiosk and signage complete the list of site elements.

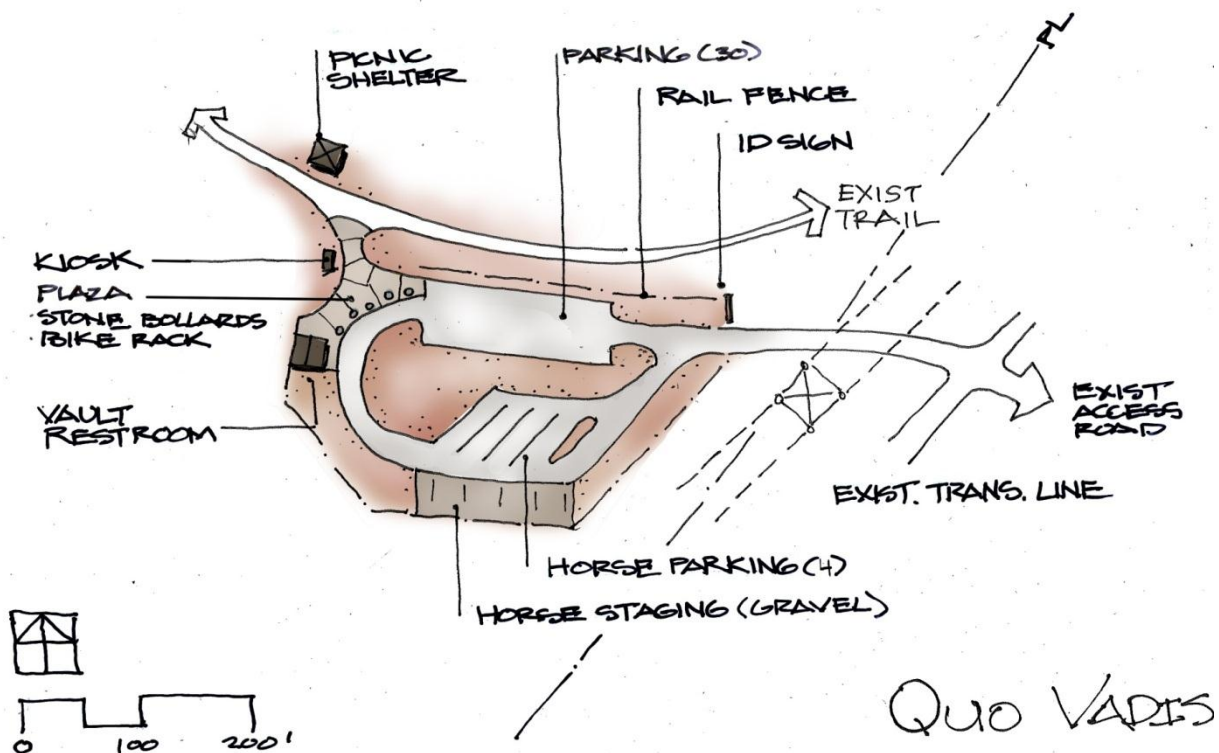


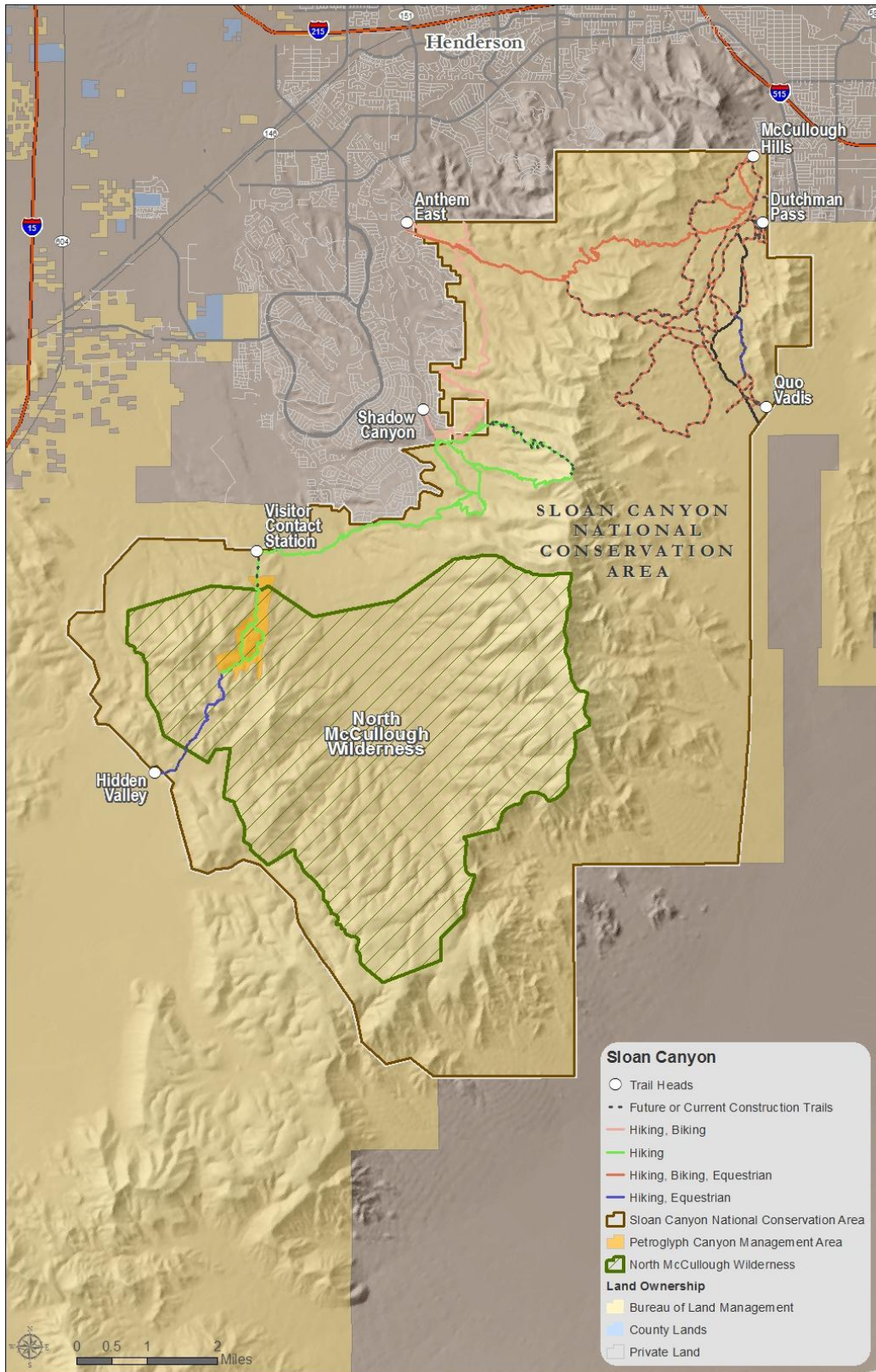
Figure 3-8 Quo Vadis Trailhead

## Additional Trails

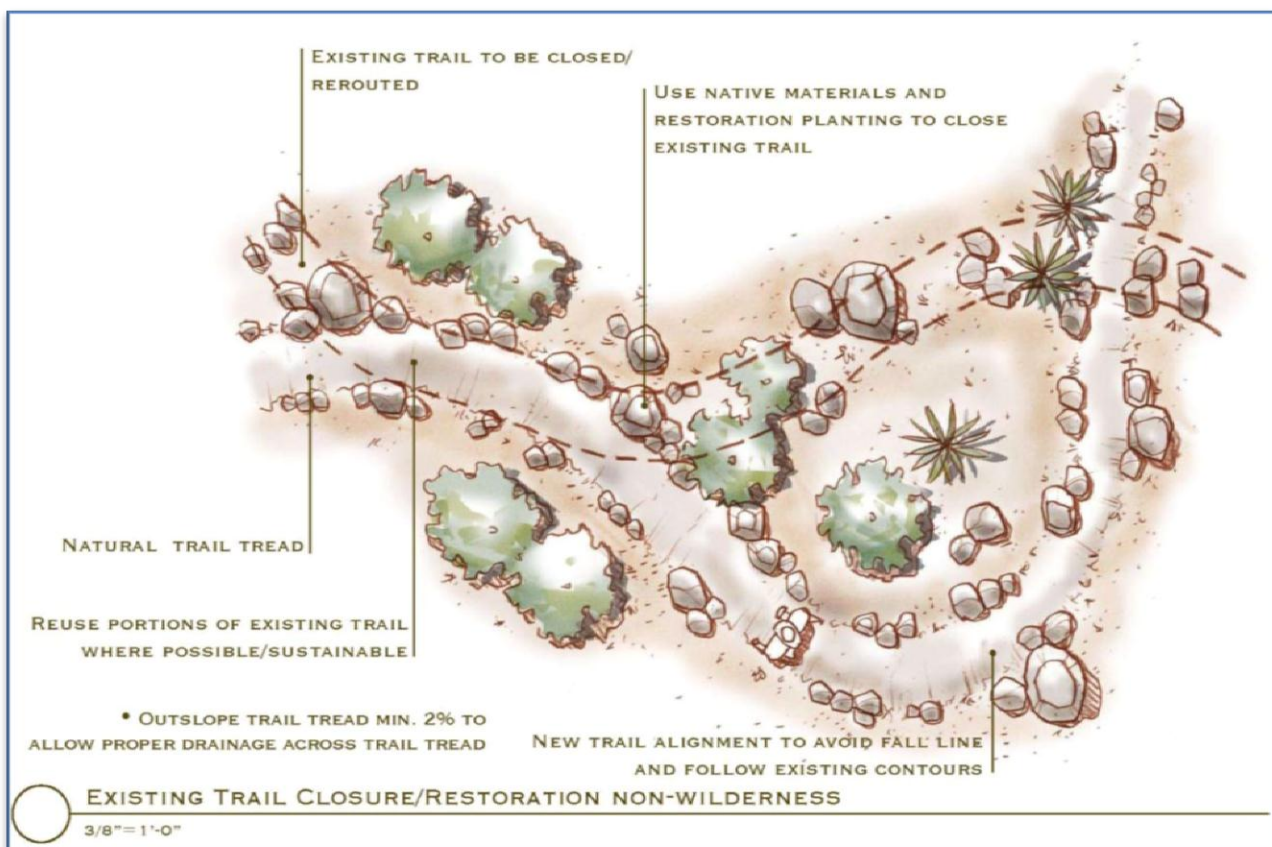
The approved Trails Master Plan for Sloan Canyon NCA calls for the development of a multi-use trail system consisting of approximately 45 miles of trail. Of these 45 miles of trail, approximately 27 miles are open to hiking, biking, and equestrian uses. A total of 16 miles are designated for hiking use only and 2 miles are hiking and equestrian use only.

Figure 3-9 shows the planned trail system in the NCA, distinguishing between those trails that have been completed and those that remain to be constructed. The GIS data show that approximately 16 miles of new trail have been constructed, not including the Anthem East and McCullough Hills trails constructed by the City of Henderson. An additional 29 miles of trail identified in the Trails Master Plan are in process of being completed, most of which are located in the northeast corner of the NCA and are intended for hiking, biking, and equestrian use. Some of these trail projects involve restoration and conversion of social trails and roads created before the designation of the NCA. This type of activity is illustrated in Figure 3-10 from the Trails Master Plan /Environmental Assessment.

It is anticipated that all trails in the current Trails Master Plan will be completed by the end of 2015 using currently committed funding. Additional funding is shown in the cost estimates to expand the existing trail system. Developing additional trails would be done through an amendment to the 2009 Trails Plan and would require NEPA and other environmental compliance, as well as public outreach.



**Figure 3-9 Existing and Proposed Trails**



**Figure 3-10 Trail Restoration**

## **B. ROAD IMPROVEMENTS**

A road extending between the access points at Dutchman Pass and Quo Vadis is one of the few roads designated in the RMP for vehicular use. This unimproved road generally parallels a powerline corridor and extends over a distance of approximately 3 miles. This road provides access through the eastern portion of the NCA and provides more direct access between the southeastern portion of the city of Henderson and the Quo Vadis Trailhead. In keeping with the nature of the Sloan Canyon NCA, the road would be classified as a primitive road, which is defined in the BLM system as “a linear route managed for use by four-wheel drive or high-clearance vehicles. These routes do not customarily meet any BLM road design standards.” As such, the road would receive a low level of maintenance, which would be limited to periodic inspection of drainage structures and grading as necessary to correct drainage problems.

A budget of \$25,000 was estimated for the purpose of making limited improvements to the Dutchman Pass Road, which provides for equipment rental and labor over a one-week period to grade the road and install several culverts or other drainage improvements over approximately 3 miles of road. This expenditure would have to be repeated periodically in future years with a frequency determined by the desired road condition level and intensity of storm events.

## C. COST ESTIMATES

This section provides an initial estimate of the costs of development at each of the use areas. A summary comparison is provided in Exhibit 3-1, with more detail provided in Exhibits 3-2 through 3-4. Additional cost details are provided in the worksheets presented in Appendix A.

The estimated total development cost for all projects is \$7,187,262.

The costs shown in Exhibit 3-1 are overall costs and are not intended to indicate specific agency responsibilities or cost-sharing arrangements that may be made between BLM, the City of Henderson, and other entities to fund these improvements.

**Exhibit 3-1 Sloan Canyon Development Cost Summary**

Area	Total Cost
<b>Petroglyph Canyon Entry</b>	
Phase 1 (Includes Road Development)	\$2,435,740
Phase 2	\$907,250
<b>Subtotal</b>	<b>\$3,342,990</b>
<b>Hidden Valley Trailhead</b>	\$341,610
<b>Dutchman Pass Trailhead</b>	\$666,570
<b>Quo Vadis</b>	\$293,640
<b>Expansion of Trail System</b>	\$1,000,000
<b>Dutchman Pass Road Improvements</b>	\$25,000
<b>Subtotal</b>	<b>\$2,326,820</b>
<b>Total Construction Cost</b>	<b>\$5,669,810</b>
Engineering Studies and Design / CA (15% construction budget)	\$850,471
NEPA Costs	\$100,000
Construction Contingency Allowance (10%)	\$566,981
<b>Subtotal</b>	<b>\$1,417,452</b>
<b>Total Project Budget</b>	<b>\$7,187,262</b>

## D. PHASING

A primary consideration in developing a phasing plan is the rate at which planned improvements are made in West Henderson and the extension of utilities and an improved access road to the Petroglyph Canyon vicinity. Phasing considerations only applies to developments proposed in the Petroglyph Canyon entry area.

## Phase 1

Phase 1 is intended to develop these essential facilities at the Petroglyph Canyon entry area by approximately 2020; road improvements, sewer, and electric. Water would be provided either by developing an onsite well or by purchasing potable water from a vendor until municipal water were available in proximity to the site. As itemized in Appendix A, other facilities provided in Phase 1 include a visitor contact station, parking, picnic shelters, and other site infrastructure.

The combined cost of developing facilities at Petroglyph would be \$2,435,740. Applying the 15% design/CA, NEPA costs of \$100,000 and 10% contingency brings the total cost of Phase 1 to \$3,603,054.

**Exhibit 3-2 BLM Sloan Canyon Phase 1 Cost Summary**

Area	Total Cost
<b>Petroglyph Canyon Entry</b>	
Phase 1	\$2,435,740
<b>Total Construction Cost</b>	<b>\$2,435,740</b>
Engineering Studies and Design / CA (15% construction budget)	\$365,361
NEPA Costs	\$100,000
Construction Contingency Allowance (10%)	\$243,574
<b>Subtotal</b>	<b>\$608,935</b>
<b>Total Phase 1 Budget</b>	<b>\$3,603,054</b>

## Phase 2

This scenario would complete development at the Petroglyph Canyon entry area. The visitor contact station building would be expanded by approximately 1,600 square feet, and the amphitheater, loop trail, and overlook pavilion would be completed.

Expansion of the trail system beyond the 45 miles defined in the current Trails Master Plan is budgeted at \$1,000,000. No specific new trails can be identified at this time; additional trail needs would be identified through a public planning effort that also accounts for environmental considerations and compliance with applicable laws and policies, including the National Environmental Policy Act (NEPA). Costs for compliance activities are not specifically identified in Appendix A, but are included in the 15% engineering and design fee applied to all proposed facility development.

The combined cost of developing additional facilities at Petroglyph Canyon and the expansion of the trail system would be \$1,907,250. Applying the 15% design/CA and 10% contingency brings the total cost of Phase 2 to \$2,384,062. NEPA costs are included in the construction estimate.

### Exhibit 3-3 BLM Sloan Canyon Phase 2 Cost Summary

Area	Total Cost
<b>Petroglyph Canyon Entry</b>	
Phase 2	\$907,250
<b>Expansion of Trail System</b>	\$1,000,000
<b>Total Construction Cost</b>	<b>\$1,907,250</b>
Engineering Studies and Design / CA (15% construction budget)	\$286,087
Construction Contingency Allowance (10%)	\$190,725
<b>Subtotal</b>	<b>\$476,812</b>
<b>Total Project Budget</b>	<b>\$2,384,062</b>

Trailhead and road improvements are proposed for key areas identified in the resource management plan. Actual development will occur in response to visitation demands, but are anticipated to be needed by 2025. Cost for conducting environmental analysis was not included in the following estimates.

### Exhibit 3-4 BLM Sloan Canyon Additional Developments Cost Summary

Area	Total Cost
<b>Dutchman Pass Trailhead</b>	<b>\$666,570</b>
<b>Dutchman Pass Road Improvements</b>	<b>\$25,000</b>
<b>Hidden Valley Trailhead</b>	<b>\$341,610</b>
<b>Quo Vadis Trailhead</b>	<b>\$293,640</b>
<b>Total Construction Cost</b>	<b>\$1,326,820</b>
Engineering Studies and Design / CA (15% construction budget)	\$199,023
Construction Contingency Allowance (10%)	\$132,682
<b>Total Project Budget</b>	<b>\$1,658,525</b>

## CHAPTER 4

### STAFFING, OPERATIONS, AND MAINTENANCE

### COST ESTIMATES

Staffing, operating, and maintenance cost estimates were developed for Sloan Canyon NCA as part of this Implementation Management Strategy. This chapter consists of the following sections:

**Staffing Plan and Direct Labor Expense Estimates.** This section presents direct labor cost estimates for the recommended staffing plan. This also includes labor cost estimates, which reflect labor supplied or allocated from the BLM Southern Nevada District Office and various BLM Field Offices, including administration, law enforcement, repair and maintenance labor expenses, and other labor expenses.

**Operational Expense Estimates.** This section presents estimates for expenses, such as materials and supplies, transportation, communication, utilities, contract services, and other indirect expenses. Estimates for operational expenses are based on current and historical expenses for these items at Sloan Canyon NCA, adjusted to reflect the new visitor facilities and access improvements. The estimates also consider similar expense levels at Red Rock Canyon NCA and the ongoing facility capital improvements cost at other comparable facilities.

**Summary of Expense Projections.** This section combines labor and operational expenses to present total annual operating cost projections over a 25-year period.

#### A. STAFFING PLAN AND LABOR COST ESTIMATES

##### Direct Labor Cost Estimates

This section presents estimates of direct labor for Sloan Canyon NCA. The following are the key assumptions used to estimate labor costs:

- Sloan Canyon NCA is assumed to be open to the public year-round, 7 days per week. The contact station is assumed to be open and staffed 8 hours daily, with potentially extended hours during peak visitation periods, such as weekends during the fall/winter months.
- BLM wage rates are fully burdened and include all benefits.
- The midpoint of the wage rate range for BLM positions for a certain General Schedule (GS) level was generally used.
- BLM wage rates and direct labor costs are judged to increase at an average annual rate of 2.5% per year, based on average historical wage growth. This assumption is likely somewhat conservative.

- The staffing plan proposed assumes up to two onsite volunteers simultaneously to augment BLM staffing.
- Trails maintenance is performed largely by volunteer groups working on specific trail projects.
- Construction of the contact station at Petroglyph Canyon is assumed to be completed and open to the public by 2020.
- Direct labor expenses between 2015 and 2020 are estimated based on budgeted labor expenses for fiscal year (FY) 2015, plus wage inflation of 2.5% per year to 2020.
- The staffing plan and associated labor cost estimate presented in this section reflect staffing levels in 2020 and beyond—the period during which the major visitor facility improvements are assumed to be completed and available to the public.

BLM's proposed table of organization is a different and larger organization than has historically operated the NCA.

The objectives of the staffing plan include:

- Meeting the needs of the facility and operating concepts for the NCA and requirements of the RMP.
- Maximizing labor efficiency and reducing unnecessary annual labor costs.
- Addressing the publically identified need for a unique identity and quality interpretation for Sloan Canyon. This is accomplished by the addition of an Interpretive/Environmental Education Specialist.
- Providing a greater staff presence in the field, another need identified by the public.



Petroglyph Site

The staffing plan and associated annual cost estimate are presented in Exhibit 4-1.

**Exhibit 4-1. Staffing Plan and Labor Cost Estimates, 2020**

	<b>GS Level</b>	<b>Hours/Year<sup>1</sup></b>	<b>Ave. Hourly Wage Rate</b>	<b>Total Annual Labor (\$2015)</b>	<b>Total Annual Labor (\$2020)</b>
NCA Manager	12	448	\$66.05	\$29,590	\$33,479
Outdoor Recreation Planner	11	1,792	\$46.34	\$83,032	\$93,943
Interpretive-Environmental Education Specialist	11	1,792	\$46.34	\$83,032	\$93,943
Park Ranger	7-9	1,792	\$35.26	\$63,186	\$71,489
Park Ranger	7-9	1,792	\$35.26	\$63,186	\$71,489
Career Seasonal Park Ranger	5-7	1,039	\$28.69	\$29,809	\$33,726
Career Seasonal Park Ranger	5-7	1,039	\$28.69	\$29,809	\$33,726
FTE Contact Station Specialist	5-7	1,792	\$28.69	\$51,412	\$58,169
<b>Estimated Annual Labor Cost</b>	<b>-</b>	<b>11,486</b>	<b>-</b>	<b>\$433,056</b>	<b>\$489,964</b>

<sup>1</sup> For the purposes of this analysis, a full-time position is 1,792 hours per year and a part-time position is 1,039 hours per year. These estimates take into account holidays and time-off each year.

Exhibit 4-1 indicates that the total annual labor costs in 2020 (the year in which all major facility improvements are assumed to be completed) are estimated to be approximately \$433,000 in 2015 dollars (or \$490,000 in 2020 dollars).

The specific duties and qualifications for each position are as follows:

#### **NCA Manager GS-12**

##### *Wages and Special Qualifications:*

- Projected 2015 hourly salary range with benefits—\$57.43 to \$74.66

##### *Duties:*

- Manage compliance with enabling legislation/NCA designation
- Monitor and ensure implementation of management plans
- Management and oversight of the budget and funding issues
- Provide supervision and management direction for NCA staff
- Identify and interface with partner organizations

#### **Outdoor Recreation Planner GS-11**

##### *Wages and Special Qualifications:*

- Projected 2015 hourly salary range with benefits—\$40.29 to \$52.38
- Special qualifications—Series 401 professional Outdoor Recreation Planner (not GS series 023)

*Duties:*

- Maintain, monitor, and implement recreation management and implementation plans
- Develop monitoring program for visitor use and resource impacts
- Administer permitting program, including private Petroglyph Canyon access and all Special Recreation Permits in Sloan Canyon
- Direct work of park rangers with regard to maintenance and monitoring duties
- Identify, pursue, and manage partnerships and volunteers

**Interpretive Specialist / Environmental Educator GS-11**

*Wages and Special Qualifications:*

- Projected 2015 hourly salary range with benefits—\$40.29 to \$52.38.
- Special qualifications—NAI certification as Interpretive Planner and/or Interpretive Manager

*Duties:*

- Creates/designs unique identification materials for Sloan Canyon
- Prepares Interpretive Master Plan for the NCA
- Develops interpretive messages and media
- Conducts general community outreach
- Outreach to local schools to develop outdoor education programs
- Coordinates with volunteers and contact station staff on messaging

**Park Rangers GS-7 to GS-9 (2)**

*Wages and Special Qualifications:*

- Projected 2015 hourly salary range with benefits—\$27.23 to \$43.29
- Special qualifications—NAI certification as Interpretive Guide. Advanced first aid, such as EMT or Wilderness First Responder.

*Duties:*

- Monitor, record, and report visitor-use information
- Light maintenance of facilities
- Install and maintain signage
- Work with volunteers in the field
- Deliver interpretive information
- Provide visitor information and assistance
- General patrols and surveillance

### **Contact Station/Visitor Information Specialist GS-5 to GS-7**

#### *Wages and Special Qualifications:*

- Projected 2015 hourly salary range with benefits—\$21.98 to \$ 35.40
- Special qualifications—NAI certification as Interpretive Guide. Basic first aid training, including AED and CPR certifications.

#### *Duties:*

- Public contact and information at the contact
- Schedule and coordinate volunteer staffing of contact station
- Assist public with acquiring permits for Petroglyph Canyon access
- Present interpretive programs at the contact station

### **Career Seasonal Park Rangers GS-5 to GS-7 (2)**

#### *Wages and Special Qualifications:*

- Projected 2015 hourly salary range with benefits—\$21.98 to \$ 35.40
- Special qualifications—NAI certification as Interpretive Host. Advanced first aid, such as EMT or Wilderness First Responder.

#### *Duties:*

- Assist and augment park rangers

Finally, the NCA would require regular support from an Archaeologist position given the remarkable resources present. There are a number of rights-of-way for utilities, transmission lines, roads, trails and communication sites within the NCA.

Therefore, part-time assistance from a Lands and Realty Specialist is judged to be needed to monitor and correct problems on these rights-of-way and to deal with trespass issues that are sure to arise given the proximity of a growing community. The Archaeologist and Lands and Realty Specialist positions are considered additional labor in this analysis and are discussed in the following section.



Signage at current Hidden Valley Trailhead

## **Additional Labor Expense Estimates**

This section presents estimates of additional labor, which includes labor that is not involved directly with the normal day to day operations and management of the NCA. Additional labor primarily consists of support staffing from BLM Southern Nevada District Office or various BLM Field Offices. Analysis of this labor began by identifying the primary recurring labor divisions based on input from BLM staff and review of the historical NCA budgets for FY 2013, FY 2014, and projected FY 2015. Those labor divisions that do not represent normal recurring costs were not estimated. The following labor divisions were identified as recurring expenses that are judged likely to continue to be incurred after the new visitor facilities are completed in 2020.

### ***District Administration Labor***

This division includes senior managers and administrative staff labor from the Southern Nevada District Office. This expense will remain similar to current FY 2015 levels after the visitor facility and access improvements have been completed. Therefore, District Administrative Labor was estimated based on the latest (FY 2015) budgeted amount of \$27,538 plus annual wage inflation of 2.5% per year to 2020 and beyond.

### ***District Support Services—Finance/Account/IT Labor***

This division includes finance, accounting and IT support labor contributed from the Southern Nevada District Office. This expense will remain similar to current FY 2015 levels after the visitor facility and access improvements have been completed. Therefore, District Support Services labor for finance, accounting and IT services was estimated based on the latest (FY 2015) budgeted amount of \$21,216 plus annual wage inflation of 2.5% per year to 2020 and beyond.

### ***District Support Services—Repair and Maintenance Labor***

This division includes engineering and repair and maintenance labor from the Southern Nevada District Office. BLM reports that historically virtually no engineering or repair and maintenance labor costs have been incurred at the NCA because there are essentially no facilities to repair or maintain. However, this will change with development of the proposed new visitor facilities.

Implementation involves the construction of new facilities that will require repair and maintenance not currently provided under the existing NCA budget. These facilities include a contact station/office facility with associated road and parking, improvements at trailheads and interpretive signing. Estimating the costs of maintaining these facilities is approximate, as the planning for these facilities is largely conceptual at this stage.

Exhibit 4-2 presents the estimated repair and maintenance labor estimates and corresponding assumptions for each major facility component. This exhibit estimates the total annual repair and maintenance labor expense to be \$37,000 in 2015 dollars.

**Exhibit 4-2. 2015 Estimated Repair and Maintenance Labor Expenses**

Facility Component	Assumptions	Est. Annual Repair and Maintenance (R&M) Cost
Contact Station Facility	<ul style="list-style-type: none"> <li>Assumes full 2,500 square foot facility at build-out</li> <li>City water, sewer, on-grid electrical connections</li> <li>Includes janitorial, minor repairs, utilities, administration and security</li> <li>\$8.00 per square foot R&amp;M cost based on costs at similar facilities</li> </ul>	\$20,000
Road & Paved Parking at Contact Station	<ul style="list-style-type: none"> <li>Average annual costs over 20 year maintenance cycle</li> <li>A two-lane road with a length of <math>\frac{3}{4}</math> miles and 43,000 square foot parking for 80 vehicles</li> <li>Crack seal, seal coat every 5 years, with major overlay at 20 years</li> </ul>	\$9,000
Other Parking Areas	<ul style="list-style-type: none"> <li>Parking could be native, graveled or possibly paved</li> <li>Assumes largely native materials with some drainage controls</li> </ul>	\$1,000
Toilets	<ul style="list-style-type: none"> <li>Single-hole vault toilet with 1,000 gallon capacity at two locations</li> <li>Flush toilet at one location (Dutchman Pass)</li> <li>Vault toilet pumped, charged once per year</li> <li>Four maintenance visits a week by NCA staff for flush toilets, based on existing visitation</li> <li>Two maintenance visits a week by NCA staff for vault toilets based on existing visitation</li> </ul>	\$5,000
Kiosk/Panels	<ul style="list-style-type: none"> <li>Assume 16, 4 ft. by 4 ft. interpretive panels at \$15.00/square foot for replacement</li> <li>100% replacement over five years.</li> <li>Displays designed and ready to print by NCA staff</li> <li>Minimal structural maintenance and repair</li> </ul>	\$1,000
Equestrian	<ul style="list-style-type: none"> <li>Maintaining grounds, parking areas, and upkeep</li> <li>Does not include corrals or water</li> </ul>	\$1,000
<b>2015 Total Annual R&amp;M Labor Costs</b>		<b>\$37,000</b>

### ***Law Enforcement and Resource Protection Labor***

This division includes the law enforcement ranger labor expense. This is a major recurring expense that has averaged around \$179,000 annually during the period FY 2013 to FY 2015. The current total annual law enforcement labor hours of nearly 2,600 hours is more than sufficient

to provide the necessary law enforcement capabilities within the NCA, particularly given the expansion of the number of park ranger positions under the Direct Labor category discussed above. In fact, considering the expansion of park ranger staffing, it may be possible to reduce the amount of law enforcement labor below current levels of around 2,600 hours per year. However, to be conservative, the projected law enforcement and resource protection labor expense based on the FY 2015 budgeted expense of \$183,340 plus annual wage inflation of 2.5% per year to 2020 and beyond.

### ***Las Vegas and Pahrump Field Offices Labor***

This category consists of miscellaneous labor contributed by the Las Vegas and Pahrump Field Offices. Recurring labor costs were incurred for these categories in both FY 2013 and FY 2014 and were budgeted in FY 2015. Therefore, these expenses are assumed to be incurred in the future and were projected at their current level in FY 2015 of \$8,167, plus annual wage inflation of 2.5% per year to 2020 and beyond.

### ***Lands and Realty Specialist Labor***

This analysis assumes that a District-Level Lands and Realty Specialist would contribute a portion of their time annually to the NCA to handle right-of-way and other lands related issues. This analysis assumes the specialist would contribute 180 labor hours (or roughly 1 month) annually to the NCA and earn an average 2015 hourly wage rate (including benefits) of \$46.34 (reflecting a GS-11 level position), for a total estimated annual labor expense of \$8,340 in 2015 dollars. This labor expense was then projected by annual wage inflation of 2.5% per year to 2020 and beyond.

### ***Archaeologist Labor***

This analysis assumes that a Field Office Archaeologist would contribute a portion of time annually to the NCA to manage cultural resource monitoring and preservation. For FY 2014 and FY 2015 the current Archaeologist serving the NCA contributed a total of 176 labor hours to the NCA. This analysis judges that the Archaeologist would contribute 250 labor hours annually to the NCA and earn an average 2015 wage rate (including benefits) of \$46.34 (reflecting a GS-11 level position), for a total estimated labor expense of \$11,584 in 2015 dollars. This labor expense was then projected by annual wage inflation of 2.5% per year to 2020 and beyond. The specialized qualifications of the Archaeologist would include familiarity with and conformance to the Secretary of the Interior Standards and Guidelines for Archaeological and Historic Preservation (at: <http://www.achp.gov/archguide/>). The specific duties of the Archaeologist would include:

- Coordinating the site stewardship program
- Review monitoring reports

- Coordinating inventory efforts

Exhibit 4-3 summarizes projected labor in 2020, the year in which Phase 1 visitor facility improvements are assumed to be completed.

**Exhibit 4-3. Total Annual Labor Estimates, 2020**

	2020
<b>Direct Labor</b>	
NCA Manager	\$33,500
Outdoor Recreation Planner	\$93,900
Interpretive/Environmental Education Specialist	\$93,900
Permanent Park Rangers (2)	\$143,000
Career Seasonal Park Rangers (2)	\$67,500
Contact Station Specialist	\$58,200
District Administration Labor	\$31,200
District Support Services - Financial/Accounting/IT	\$24,000
District Support Services - Repair and Maintenance Labor	\$41,900
Law Enforcement & Resource Protection Labor	\$207,400
Las Vegas & Pahrump Field Offices Labor	\$9,200
Lands & Realty Specialist	\$9,400
Archeologist	\$13,100
<b>TOTAL ANNUAL LABOR COST</b>	<b>\$826,200</b>

Exhibit 4-3 indicates that the total annual labor expense in 2020 is estimated to be \$826,200 (or \$730,200 in 2015 dollars). To compare future labor costs with current labor costs, the NCA budget indicates that the total labor expense estimated for FY 2015 is \$454,039, compared to the estimated total labor cost in 2020 of \$730,200 (expressed in current year 2015 dollars). Therefore, the projected 2020 labor expenses represents an increase over current total labor costs of approximately \$276,200 in current year dollars or an increase of nearly 61%. This increase is explained by the expansion in the amount of staffing and increases in the total annual labor hours.

## **B. OPERATIONAL EXPENSE ESTIMATES**

### **Other Expenses**

This section presents estimates of non-labor expenses, including materials, supplies, and services. These estimates are based on inputs provided by BLM staff, historical costs incurred for these items at the NCA during the last three fiscal years (FY 2013-FY 2015) and comparison to the same expense levels incurred at Red Rock Canyon NCA, recognizing the Red Rock Canyon NCA is much larger and more complicated operation compared the level of operations proposed for Sloan Canyon NCA.

### ***Transportation***

This line item includes costs associated with vehicle transportation, both of persons and items, including shipping costs. The line item also includes travel expenses and vehicle costs. In FY 2015, BLM budgeted \$3,000 for this expense at Sloan Canyon NCA compared to \$18,500 budgeted for Red Rock Canyon NCA. Transportation costs in 2020 for Sloan were projected at 60% of the Red Rock Canyon NCA transportation expenses in FY 2015, plus annual inflation to 2020 and beyond.

### ***Rent, Communications, and Utilities***

This line item includes costs associated with actual or allocated rent, communications, and utilities expenses. However, since there are few facilities within the NCA, the expenses historically reported in the NCA budget for this line item appear to represent an allocation from the District to the NCA. In FY 2015, BLM budgeted \$5,200 for this expense at Sloan Canyon NCA compared to \$50,700 budgeted for Red Rock Canyon NCA. This line item is generally expected to relate to the level of facility space, particularly the amount of interior building space utilized. Therefore, to project rent, communication and utilities expense in 2020 for Sloan, the team utilized the average cost per square foot at Red Rock Canyon NCA of \$5.83 in 2015 and applied this to the proposed amount of building space at Sloan of 2,500 square feet. This results in an estimated expense of approximately \$14,600 in current (2015) dollars. This expense was then projected forward by annual inflation of 2.5% to 2020 and beyond.

### ***Contractual Services***

This line item includes the cost of any services that BLM contracts out rather than performs directly, such as janitorial services, special repair and maintenances services, and one-time contracts for special projects or services. In FY 2015, BLM budgeted \$20,500 for this expense at Sloan Canyon NCA compared to \$415,346 budgeted for Red Rock Canyon NCA. The BLM reports that the vast majority (75%-80%) of this expense at Red Rock is associated with janitorial service contracts. However, Red Rock has significantly more facilities requiring janitorial service compared to the facilities planned for Sloan Canyon, and as such, will incur a much lower costs associated with janitorial service contracts. In addition, the repair and maintenance labor costs estimates in the preceding section already included costs for janitorial service at the primary Contact Station facility at the entrance to Petroglyph Canyon. Considering these facts, contractual service costs in 2020 were estimated at twice the level of contractual expenses budgeted in FY 2015 plus annual inflation to 2020 and beyond.

### ***Supplies and Materials***

This line item represents that cost of all materials and supplies utilized to support the NCA, including repair and maintenance supplies/materials, cleaning supplies, office supplies, etc. In FY 2015, BLM budgeted \$11,600 for this expense at Sloan Canyon NCA compared to \$117,400

budgeted for Red Rock Canyon NCA. This line item is generally expected to relate to the level of facility space, particularly the amount of interior building space utilized. Therefore, to project supplies and materials costs in 2020, the team utilized the average cost per square foot at Red Rock Canyon NCA of \$13.49 in 2015 and applied this to the proposed amount of building space at Sloan of 2,500 square feet. This results in an estimated expense of approximately \$33,700 in current (2015) dollars. This expense was then projected forward by annual inflation of 2.5% to 2020 and beyond.

### ***Printing and Reproduction***

This line item reflects costs associated with printing and reproduction of NCA information, such as visitor brochures, maps, publications, interpretive materials, etc. BLM did not budget expenses associated with printing and reproduction in FY 2015, while Red Rock Canyon NCA budget \$5,000 for this line item. This expense was estimated in 2020 at \$5,600 based on the cost budgeted at Red Rock in FY 2015 and guidance provided by BLM. This expense was projected to increase by annual inflation of 2.5%.

Exhibit 4-4 summarizes the total annual other direct expenses estimated for the NCA in 2020.

**Exhibit 4-4. Total Annual Operational Expense Estimates, 2020**

	<b>2020</b>
Contractual Services	\$46,400
Supplies & Materials	\$38,200
Rent, Communications, and Utilities	\$16,500
Transportation	\$12,600
Printing & Reproduction	\$5,600
<b>Total Other Indirect Expenses</b>	<b>\$119,300</b>

*Note: Any difference between the individual costs and the total is due to rounding to the nearest \$100.*

Exhibit 4-4 indicates that total operational expenses in 2020—the year in which Phase 1 visitor facility improvements are assumed to be completed—are estimated to be \$119,300 (or \$105,400 in 2015 dollars).

## C. SUMMARY OF EXPENSE PROJECTIONS

Exhibit 4-5 presents projected labor and operational expenses over the 20-year period 2020 to 2039.

**Exhibit 4-5. Total Operating Cost Projections, 2020-2039**

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Direct Labor	\$490,000	\$502,200	\$514,800	\$527,600	\$540,800	\$554,300	\$568,200	\$582,400	\$597,000	\$611,900
Indirect Labor	\$336,200	\$344,600	\$353,300	\$362,100	\$371,100	\$380,400	\$389,900	\$399,700	\$409,700	\$419,900
Other Indirect	\$119,300	\$122,200	\$125,300	\$128,400	\$131,600	\$134,900	\$138,300	\$141,800	\$145,300	\$148,900
<b>Total</b>	<b>\$945,500</b>	<b>\$969,100</b>	<b>\$993,300</b>	<b>\$1,018,200</b>	<b>\$1,043,600</b>	<b>\$1,069,700</b>	<b>\$1,096,400</b>	<b>\$1,123,900</b>	<b>\$1,151,900</b>	<b>\$1,180,700</b>
	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Direct Labor	\$627,200	\$642,900	\$658,900	\$675,400	\$692,300	\$709,600	\$727,400	\$745,500	\$764,200	\$783,300
Indirect Labor	\$430,400	\$441,200	\$452,200	\$463,500	\$475,100	\$487,000	\$499,100	\$511,600	\$524,400	\$537,500
Other Indirect	\$152,700	\$156,500	\$160,400	\$164,400	\$168,500	\$172,700	\$177,000	\$181,500	\$186,000	\$190,600
<b>Total</b>	<b>\$1,210,300</b>	<b>\$1,240,500</b>	<b>\$1,271,500</b>	<b>\$1,303,300</b>	<b>\$1,335,900</b>	<b>\$1,369,300</b>	<b>\$1,403,500</b>	<b>\$1,438,600</b>	<b>\$1,474,600</b>	<b>\$1,511,500</b>

*Note: Any difference between the individual costs and the total is due to rounding to the nearest \$100.*

Exhibit 4-5 indicates that total annual operating costs in 2020 are estimated at \$942,600 (or \$833,100 in 2015 dollars). For comparison to current total operating costs, the total operating cost budget for the NCA in FY 2015 is \$494,300. Therefore, total operating costs in 2020 are \$338,800 higher (in current year 2015 dollars) compared to the current budgeted operating costs, representing an increase of roughly 68%.

The following chapter presents revenue projections for the NCA and presents financial projections, considering impacts to the Special Account associated with the operating and capital costs forecasts.

## CHAPTER 5

### FINANCIAL ANALYSIS OF PROPOSED DEVELOPMENTS

Revenue and cost projections were projected to consider the impacts on the BLM Special Account, the primary funding source for capital and operating costs. This chapter consists of the following three sections:

**Revenue Projections.** This section presents revenue projections associated with access/permit fees and revenues generated from by Special Recreation Permits (SRPs). The revenue projections are based on estimates of NCA visitation presented in Chapter 2, considering access/permit fees at other BLM sites, and Special Recreation Permit revenues generated at Red Rock Canyon NCA.

**NCA Funding Sources.** This section describes the relevant potential future funding sources for capital improvements and operations within the NCA, focusing in particular on the use of Special Account funding. This section discusses the current Special Account balance, funding requirements specified by the laws governing the Account, and an overview of the historical and potential future interest yields.

**Financial Projections and Recommendations.** This section combines projected revenues, operating costs, and capital cost estimates, and presents the impacts to the Special Account over a 25-year period. The analysis also considers impacts to Special Account balance under low, middle, and high interest yield scenarios. This section also presents recommendations regarding strategies for sustaining the Special Account balance over time thereby enabling BLM to maximize future funding of NCA operations.

#### A. REVENUE ESTIMATES

##### Special Area Permits for Petroglyph Canyon

The Sloan Canyon Resource Management Plan (RMP) indicates that all entry into Petroglyph Canyon shall be by permit only. The intent is that use on weekends would be reserved for guided hikes into the canyon with a capacity limit as follows: “No more than one guided group of no more than 20 people are allowed in the Petroglyph Management Area at one time.” The RMP states that during the weekdays “visitors may go to the Petroglyph Management Area unaccompanied by a BLM-sponsored guide if they obtain a permit” and that “a total of no more than 25 permits per hour will be issued for self-guided tours.”

There is no requirement that a fee be charged for these Special Area Permits, however, charging a fee provides an opportunity for revenue to offset some of the costs associated with permit issuance, compliance and resource monitoring. It is recommended that the BLM establish a fee for the Special Area Permits applicable to all visitors entering the Petroglyph

Canyon Management Area, rather than seeking a Standard Amenity Fee for accessing the NCA at the Contact Station area.

Prior to requiring a Special Area Permit to enter the Petroglyph Canyon Management Area, the BLM would have to adopt a special rule requiring such permits of all individuals entering the Canyon. This rule making authority is vested in the BLM State Director and the authority for special rules is found in 43 CFR 8365.16. The process involves publishing the proposed rule and final rule in the Federal Register. If BLM seeks to establish a fee for the permit, there would be savings involved in combining the fee establishment within the special rule since both actions require Federal Register Publication.

Establishing a fee for the permit requires *Federal Register* notification, consultation with a Resources Advisory Council, and general public outreach. BLM is free to propose whatever fee it deems appropriate. For the purposes of this analysis, the fee for the Special Area Permit is *assumed* to be \$5.00 per person. This assumption is based on fees for similar experiences, such as at Cedar Mesa, Sand Flats, Slickrock Bike Trail, and Coyote Buttes BLM sites—all of which are located in Utah. The BLM only charges higher fees at locations with high-demand specialized experiences, including some rivers or locations that have much more developed infrastructure. The fee of \$5.00 per person per day is also in keeping with the BLM's National Fee Schedule that has established that rate as the minimum use fee for organized groups and competitive events.

Once the requirement to obtain a Special Area Permit and permit fees are known, the BLM must then implement a permit issuance and tracking system. Permit systems can be expensive to maintain and tend to be labor intensive when done entirely in house. For this reason, it is recommended that permitting be handled through the National Recreation Reservation Service, also known as Recreation.gov. There is virtually no expense to BLM in setting up and issuing permits other than staff time spent on development with Recreation.gov. All the hardware, software development and deployment costs are borne by Recreation.gov.

It is further recommended that rather than formal permits, the permitting be done through the use of tickets. This is commonly done with day use, individual entry type programs. The costs are also less for the visitor, in this case the visitor accessing Petroglyph Canyon. For example, Recreation.gov charges a \$6.00 service charge for a permit yet only \$1.50 for a ticket. The ticket system is well accepted and understood by the public. The process is not unlike buying concert or movie tickets online. The visitor can either print their ticket or download it to a smartphone or other mobile device. From the standpoint of BLM, there is no difference between permits or tickets for short term day use. The BLM can attach appropriate stipulations, regulations, require compliance, and perform inspections with the use of tickets. Limitations on the number of tickets issued are programmed into the system so BLM does not need to track that independently. Most visitors would obtain tickets in advance, but they could be issued at the visitor contact station as either self-issue or with the help of contact station staff. If desired,

a check in at the contact station could be required as one of the terms and conditions on the ticket.

To estimate annual revenues associated with Special Area Permits (or tickets) for entrance into the Petroglyph Management Area, the assumed per person ticket price of \$5.00 was multiplied by the number of visitors projected to enter the Canyon on annual basis presented in Chapter 2. The ticket price of \$5.00 was assumed increases at an average annual rate of 2.0% per year to keep pace with inflation.

### **Special Recreation Permits for Commercial, Competitive, and Organized Group Use**

The issuance of SRPs is provided for in the Sloan Canyon NCA RMP. BLM issues SRPs for a variety of purposes, all of which are applicable to Sloan Canyon NCA, including the following:

- Support recreation planning goals to provide experience and beneficial outcomes to the public
- Manage/monitor visitor use within capacity limits
- Provide for public health and safety
- Reduce user conflicts
- Reduce resource conflicts and damage
- Educate/communicate with the public
- Manage BLM workload
- Receive a return for the commercial use of public land

Permits are issued for commercial, competitive and organized group use for all the reasons listed above. They provide an opportunity to generate additional revenue as well as enhance management of the area and provide recreation/outdoor experiences for individuals who might not otherwise have access to them. Commercial use is defined as any recreation use for financial gain. This would include activities such as guiding, outfitting, and livery services. Two types of Special Recreation Permit revenues are considered in this analysis: revenues generated from Petroglyph Canyon Guided Trips on weekends and SRPs for all other miscellaneous services/uses.

### ***Petroglyph Canyon Guided Trips***

It is recommended that the weekend guided trips into Petroglyph Canyon be conducted by a commercial guide service holding an SRP. Either for-profit enterprises or non-profit groups (e.g. friends groups) could be the commercial SRP holder providing the guide services in Petroglyph Canyon. The recommendation of using a commercial guide service holding an SRP is based on the following:

- A substantial number of for-profit guides/outfitters and non-profit entities exist in southern Nevada, northwestern Arizona and southwestern Utah. For some of these operations, adding Petroglyph Canyon day hikes to their list of services would be fairly easy and would rely on existing resources.
- Professional guide outfitters and non-profit entities have marketing and public outreach expertise and access that would tend to maximize use over what the BLM would likely be able to accomplish. For example, outfitting companies often implement creative marketing strategies and have the ability to package trips either individually or with other outfitters.
- The outfitter or non-profit assumes all risks associated with marketing.
- Outfitters and guides are well insured and assume first position in the event of liability for personal injury and property damage and thus reduce the liability exposure of the BLM.
- One of the advantages of a non-profit group providing the guided hike service is that any use of groups' volunteer labor would potentially allow it to charge a somewhat lower rate than if paid labor were utilized. However, non-profit entities providing the guided hike using unpaid volunteer labor would still likely want to charge some amount for the service in order to cover expenses such as guide recruitment, training, marketing/outreach, transportation, supplies, insurance, and other expenses.

In this analysis, a commercial SRP holder is assumed to charge visitors a \$20.00 fee (including the \$5.00 special area fee) for leading the day hike into Petroglyph Canyon. The amount the operator could charge for the guided hike service is based on market demand and to a large extent, the value added by the guide. For a Petroglyph Canyon day hike, value added might include having a professional archaeologist as a guide or providing lunch or transportation to and from the trailhead. In terms of the revenues that BLM would earn, the minimum yearly fee for a commercial SRP is the greater of \$105 per year or 3.0% of gross revenues generated from the guided hiking service. In addition to this, the BLM would receive the assumed Special Area Permit fee of \$5.00 per visitor entering Petroglyph Canyon.

To project revenues from the commercial SRPs for weekend guide service for Petroglyph Canyon, the estimated number of visitors taking the guided hikes on weekends, presented in Chapter 2, was multiplied by the guided tour rate of \$15.00 per person. The guided tour rate was increased annually by 2.0% to keep pace with inflation.

### ***Other Commercial, Competitive, and Organized Group Opportunities***

The market for other SRPs within the Sloan Canyon NCA is not well identified. However, given the population and economic growth in the area, it is not unreasonable to assume some of these uses will materialize.

There may be opportunity for guided trips outside of Petroglyph Canyon and there is a possibility for guided horseback trips and trail riding/packing equestrian tours. Similar opportunities may exist for mountain biking. Other possible commercial activities/events might include instructional services or gear demonstration days. Furthermore, there may be some opportunity for competitive events such as mountain bike races/trials and trail running.

There are a number of organized group events that could potentially take place within Sloan Canyon NCA, yet these would include mostly social activities such as weddings. Scouting activities, club events, corporate retreat type activities might also fit this category. Revenue from competitive and organized groups is the greater of \$105.00 or \$5.00 per person per day.

To estimate revenues from other SRP uses, the team utilized the average SRP revenues generated at Red Rock Canyon NCA per visitor for FY 2014 of approximately \$0.12 per visitor. Since there are far more SRP uses at Red Rock Canyon NCA and considering that this analysis already projected SRP revenues separately for guided tours, we reduced the average spending per visitor on SRPs by 50% for Sloan Canyon (or \$0.06 per visitor), then multiplied the average SRP spending by total annual visitation to the NCA. The average annual SRP spending per visitor was also increased annually by 2.0% to keep pace with inflation.

Exhibit 5-1 summarizes projected revenues for Sloan Canyon NCA over the 20-year period of 2020 to 2039 (no revenues are generated in the interim period 2015-2019). These revenues are those that the BLM would receive directly.

**Exhibit 5-1. Sloan Canyon NCA Revenue Projections, 2020-2039**

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Petro. Canyon Fee	\$22,700	\$46,200	\$70,700	\$73,900	\$77,200	\$80,700	\$84,400	\$88,200	\$92,200	\$96,300
SRP for Guide	\$500	\$1,100	\$1,700	\$1,800	\$1,800	\$1,900	\$2,000	\$2,100	\$2,200	\$2,300
SRP Other	\$6,100	\$6,600	\$7,200	\$7,600	\$7,900	\$8,300	\$8,700	\$9,100	\$9,500	\$10,000
<b>Total Rev.</b>	<b>\$29,200</b>	<b>\$53,900</b>	<b>\$79,600</b>	<b>\$83,200</b>	<b>\$87,000</b>	<b>\$90,900</b>	<b>\$95,100</b>	<b>\$99,400</b>	<b>\$103,900</b>	<b>\$108,600</b>
	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Petro. Canyon Fee	\$100,700	\$105,200	\$109,900	\$114,900	\$120,100	\$125,500	\$131,200	\$137,100	\$143,300	\$149,800
SRP for Guide	\$2,400	\$2,500	\$2,600	\$2,700	\$2,900	\$3,000	\$3,100	\$3,300	\$3,400	\$3,600
SRP Other	\$10,500	\$11,000	\$11,600	\$12,100	\$12,700	\$13,400	\$14,100	\$14,800	\$15,600	\$16,400
<b>Total Rev.</b>	<b>\$113,500</b>	<b>\$118,700</b>	<b>\$124,100</b>	<b>\$129,800</b>	<b>\$135,700</b>	<b>\$141,900</b>	<b>\$148,400</b>	<b>\$155,200</b>	<b>\$162,300</b>	<b>\$169,700</b>

Exhibit 5-1 indicates that the largest source of projected revenue is from the Special Area Permit or ticket fee to enter the Petroglyph Management Area ("Petro. Canyon"). The assumed Special Area Permit fee of \$5.00 is charged to all visitors accessing the Petroglyph Management Area. The revenues associated with the SRP for guide service on weekends into Petroglyph Management Area were estimated by applying a rate 3.0% of the estimated total gross revenues generated by this service. Finally, SRP revenues for all other services were estimated

by applying the adjusted average SRP spending per visitor based on spending per visitor at Red Rock Canyon NCA.

## **B. SLOAN CANYON NATIONAL CONSERVATION AREA FUNDING SOURCES**

The funding sources available to Sloan Canyon NCA to fund operations and capital improvements primarily consist of the following:

- Special Account Funding
- Other Funding Sources:
  - Southern Nevada Public Land Management Act (SNPLMA)
  - BLM's Management of Land and Resources (MLR) appropriation
  - Other specific appropriation
  - Partner funding

The following describes each of these funding sources and their relevance for funding operations and capital improvements within the NCA.

### **Special Account Funding**

In establishing Sloan Canyon NCA, Congress authorized the sale of roughly 500 acres of federal land within Clark County, Nevada, in 2002. The Clark County Conservation of Public Land and Natural Resources Act of 2002 (Public Law 107-282) specified that 95% of the proceeds from the sale of these lands (also known as Tract A lands):

. . . shall be deposited in the special account established under the Southern Nevada Public Lands Management Act of 1998 (or Public Law 105-263; 112 Stat. 2345), to be available to the Secretary, without further appropriation for:

- (a) The construction and operation of facilities to support the management of the Conservation Area;
- (b) The construction and repair of trails and roads in the Conservation Area authorized under the management plan;
- (c) Research on and interpretation of the archaeological and geological resources of the Conservation Area;
- (d) Conservation and research relating to the Conservation Area; and
- (e) Any other purpose that the Secretary determines to be consistent with the purpose described in section 602.

The BLM confirms that the Special Account containing the funds from the sale of the 500-acre parcel (Tract A lands) was established in 2004 and has since been used to fund the operations and management of the conservation area to date including: labor, contracts for resource management plan development, environmental analysis, trail construction, environmental education and interpretation activities, kiosk development, law enforcement, research, restoration activities, and additional activities associated with managing the NCA. The language from the Clark County Conservation of Public Land and Natural Resources Act of 2002 clearly indicates that the Special Account funding may be used to fund *both* capital improvements and NCA operations.

Exhibit 5-2 presents the Special Account balance at the end of FY 2014.

**Exhibit 5-2. Special Account Balance, End of FY 2014**

	End of FY 2014
Special Account Balance	\$63,245,232

The Southern Nevada Public Lands Management Act of 1998 (or Public Law 105–263) establishes requirements for how the Special Account funds must be managed and invested. Specifically, Section 4(f) Investment of Special Account states that:

All funds deposited as principal in the special account shall earn interest in the amount determined by the Secretary of the Treasury on the basis of the current average market yield on outstanding marketable obligations of the United States of comparable maturities. Such interest shall be added to the principal of the account and expended according to the provisions of subsection (e)(3).

In addition, Southern Nevada Public Lands Management Act of 1998 also appears to limit the annual expenditures on capital improvements using Special Account funds. Specifically, Section 4(e)(3)(C) Limitation states that:

Not more than 25 percent of the amounts available to the Secretary from the special account in any fiscal year (determined without taking into account amounts deposited under subsection (g)(4)) may be used in any fiscal year for the purposes described in subparagraph (A)(ii).

In summary, the law requires the Special Account funds to be invested in U.S. Treasury Securities and also appears to limit the capital improvement expenditures in a given fiscal year to 25% of the balance of the Special Account. It is anticipated that the annual capital funding limitation will not significantly impact future development of the proposed capital improvements, since the estimated capital improvement costs are well below 25% of the current and anticipated near future Special Account balances.

The requirement that the Special Account funds be invested in U.S. Treasury Securities was confirmed by the BLM accountant managing the Special Account funds, who indicated that funds are currently invested in Treasury Bills with a maturity of 6 months.<sup>1</sup> The requirement that the Special Account funds be invested in Treasury Securities effectively limits the annual interest yields to those generated by U.S. Treasury Securities. The following provides a brief overview of the types of U.S. Treasury Securities that the Special Account funds could be invested in:

**Treasury Bills.** These bills are short-term securities with maturities of no more than one year. The Treasury bill market is highly liquid, meaning that investors can quickly convert bills to cash through a broker or bank. The advantage of the Treasury Bill is that it can be quickly converted to cash, for example, to fund capital improvements or operations at Sloan Canyon NCA with minimal delays. The BLM reports that all of the Special Account funds are invested in Treasury Bills with a maturity of 6 months.

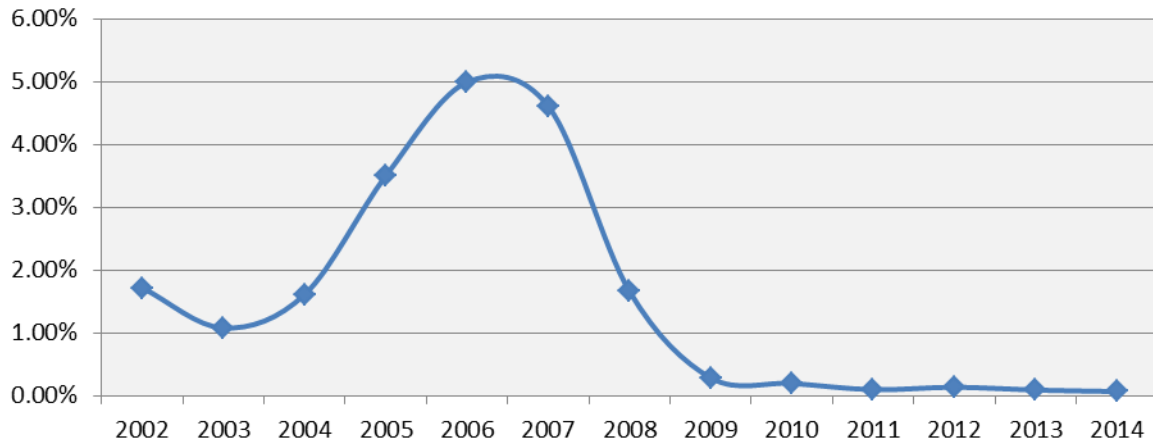
**Treasury Notes.** These notes are intermediate to long-term investments, typically issued in maturities of 2, 3, 5, 7, and 10 years. The advantage of these securities is that they generally pay higher interest yields, compared with Treasury Bills, yet are less liquid, meaning that they cannot be as easily converted to cash.

**Treasury Bonds.** These bonds cover terms of longer than 10 years. Treasury Bonds typically offer the highest interest yields of all the U.S. Treasury Securities yet offer the least liquidity as well. Treasury Bonds are a less appropriate type of investment for the Special Account funds, since these funds need to be able to be converted into cash within relatively short time periods so as to be capable of funding ongoing operations and capital improvements within the NCA.

The interest yields of the Treasury Securities in which the Special Account funds are invested are critical as they generate interest income which helps sustain the Special Account balance and therefore prolong the Accounts' ability to fund NCA operations and capital improvements over time. However, beginning with the onset of the Great Recession in 2007/2008, Treasury Security yields have declined significantly. For example, at the peak in 2006/2007, 6-month Treasury Bills paid a yield of 5.1% compared the current yield (as of January 16, 2015) of just 0.07%. Figure 5-1 presents the average annual interest yield for 6-month Treasury Bills over the period 2002 to 2014.

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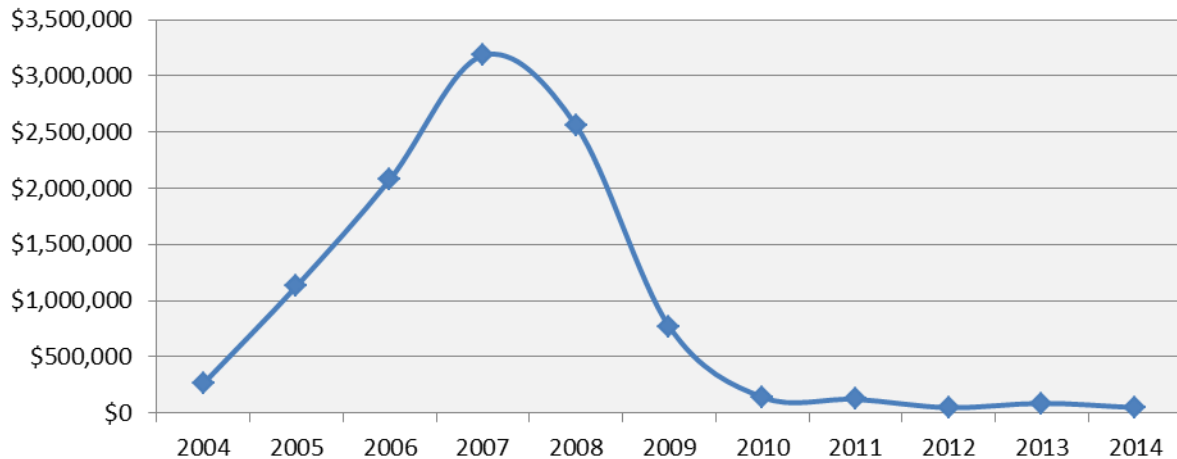
<sup>1</sup> Information provided by BLM accountant John Vest.



**Figure 5-1. Average Annual Interest Yields from 6-Month Treasury Security, 2002-2014**

Figure 5-1 highlights that yields declined rapidly after 2007 and have remained at historic lows of less than 0.20% over the last 5 years from 2010 to 2014. In addition, on average, 2014 experienced the lowest average annual yield at just 0.06%, compared with 0.09% in 2013. Indeed, the BLM reports that the 2-year average annual interest yield for the Special Account investments for FY 2013 and FY 2014 was roughly 0.10% and the yield for FY 2014 alone was approximately 0.07%. The BLM staff managing the Special Account funds indicated that they expect rates will go up slightly, with the yield in FY 2015 estimated to be 0.075%, which is close to the current market rate of 0.070%.

Figure 5-1 indicates that BLM was fortunate to establish the Special Account in 2004, when yields were on the rise, which helped to generate significant annual interest payments over the period 2004 to 2009. Figure 5-2 presents the dollar amounts generated by the annual interest yields from the Special Account investments from FY 2004 through FY 2014, which highlights the magnitude of the negative impact to annual interest income associated with the recession.



**Figure 5-2. Annual Interest Income Generated by Special Account Funds, 2004-2014**

Figure 5-2 indicates that at the peak of the market in 2006/2007, the Special Account generated annual interest income of nearly \$3.2 million. In comparison, in FY 2014 the Special Account funds generated only \$47,000 in interest revenues, significantly less than at the peak. If interest yields remain at or near the current levels, then the amount of interest generated will not sustain the Special Account balance indefinitely, as the interest generated will not offset the NCA's annual operating and capital expenses. Future interest yields for Treasury Securities ultimately depend on a multitude of factors including economic growth, macroeconomic performance of US economy, and monetary policy implemented by the U.S. Federal Reserve Bank. At this point in time, there are no clear indicators that suggest Treasury Security yields will change significantly any time in the near future. Therefore, to be conservative we project future interest yields at current levels of around 0.075%.

This analysis assumes that in the future, Special Account Funds will continue to be invested in 6-month Treasury Bills (as they are currently) and assumes the following interest yield range to project low, middle and high interest income:

- High yield: 1.000%
- Medium yield: 0.500%
- Low yield: 0.075%

The financial projections presented in Subsection C below assume an annual interest yield of 0.075%, which is close to the interest yield of the Special Account in FY 2014 of nearly 0.070% reported by the BLM. Given that over the last five years (2010-2014) interest yields have remained at levels below 0.200%, and considering there are no indications rates will rise significantly in the near future, it is reasonable to assume an annual yield of 0.075% going forward. However, the projections also model medium and high yields of 0.500% and 1.000% as

well, which are still substantially below the levels achieved prior to 2009, when yields generally ranged between 1.0% and 5.0%.

In summary, using the Special Account funds would be the simplest and most straight forward means of funding facility capital improvements and operations. In addition, such use of funds is clearly permitted under the laws governing the account and appears to be the objective of establishing the Special Account in the first place. Yet, using the Special Account to fund capital improvements would also reduce the funds' principle and reduce future interest income that would otherwise have been generated by these funds. However, as discussed above, considering the significant decline in annual interest yields beginning in 2010 and the current and projected low interest yields in the future, the amount of interest revenue lost from funding the facility capital improvements would only result in a loss in interest income of roughly \$129,000 over a period of 20 years. The very low current and projected future interest yields reduces the effective cost of using Special Account principle to fund facility capital improvements, since the projected interest income generated on those funds is so low.

As will be discussed later in this section, given the low interest yields, it makes financial sense to use the Special Account to fund facility capital improvements sooner rather than later, since construction costs are expected to increase faster than interest yields, making the cost of future construction much greater than current construction costs. The higher future construction costs would therefore reduce the Special Account balance to a greater degree compared to making those improvements earlier.

### **Other Funding Sources**

The following are other funding sources that could possibly be used to fund NCA operations and capital improvements.

#### ***Southern Nevada Public Land Management Act (SNPLMA)***

SNPLMA allows the BLM to sell public land within a boundary around Las Vegas. Proceeds from sale of these lands are then made available for certain types of projects that are approved by the Secretary of the Interior. Authorized uses for SNPLMA funds include:

- Parks, trails, and natural areas
- Capital improvements
- Conservation initiatives
- Multi-species habitat conservation plan
- Environmentally sensitive land acquisitions
- Hazardous fuels reduction and wildfire prevention
- Eastern Nevada Landscape Restoration Project

- Lake Tahoe restoration projects

The identified uses of SNPLMA funds suggest that they could only be used to fund capital improvements at Sloan Canyon NCA and would not be available for funding ongoing operations.

### ***BLM's Management of Land and Resources Appropriation***

The MLR appropriation represents BLM's largest regular source of funding and provides funding for a wide range activities, services and areas including funding for NCAs. Specifically, MLR provides funds for operating programs such as energy and minerals development, protection of lands and resources, land use planning, management of wildlife, grazing, use authorizations of public lands, recreation, surveys and other programs. MLR funding could be used to fund ongoing operations at Sloan Canyon NCA, however, with the existence and availability of Special Account funds, the BLM has indicated that securing and receiving MLR funding would be a challenge. This is particularly true since MLR funding has reportedly been significantly constrained in the post-recessionary period. Therefore, it appears that MLR funding would only be a potential option if the Special Account balance fell below that required to sustain NCA operations and alternative funding sources were required. Given this judgment, it appears that one strategy would be for BLM to develop and operate Sloan Canyon NCA using Special Account funds until those funds are depleted, then apply for MLR funding to support ongoing operations within the NCA.

### ***Other Specific Appropriation***

A specific appropriation for construction and development of the proposed visitor facilities at Sloan Canyon NCA could potentially be pursued under the BLM budgeting process. However, considering that: a) the Special Account currently exists, b) Sloan Canyon NCA is not a particularly well-known or large NCA (compared to sites such as Red Rock Canyon NCA, for example), and c) that the visitor facilities being proposed are rather limited in size and scope, the NCA is not a particularly strong candidate for receiving a specific appropriation to fund capital improvements. This is not to say that receiving such an appropriation is not possible, only that there would likely be other BLM units that would be seen to have a greater need for funding compared to Sloan Canyon NCA. In addition, applying for such an appropriation could take a significant amount of time and delay the development of facility improvements.

### ***Partner Funding***

The ability of partners to contribute funding for either capital improvements or operations is largely a function of the partners' funding capabilities. Although partner organizations such as Friends of Sloan Canyon, Nevada Rock Art Foundation, Great Basin Institute, and others are actively involved and interested in the NCA, most are non-profit organizations with limited funding ability. This is particularly true in the post-recessionary era where grant funding and fundraising have become significantly limited, resulting in reduced resources for most non-

profit organizations. Instead, the contributions that these partners can make includes contributing volunteer labor, marketing and public outreach services which are incredibly valuable and ultimately help reduce costs that the NCA might otherwise incur.

However, other partners, particularly the City of Henderson, would likely have a relatively greater capability to fund capital improvements and services within the NCA. For example, the City of Henderson has expressed a willingness to make access and road improvements up the BLM land boundary near the main entrance to the Petroglyph Canyon Contact Station. The City may also be willing to fund the development of utility extensions—water, sewer, power—up to and perhaps within the NCA and serving the Contact Station area. However, specific future negotiations between senior BLM and City staff are needed to specify the contributions the City is willing to commit to.

## C. FINANCIAL PROJECTIONS AND RECOMMENDATIONS

### Financial Projections

This subsection presents the financial projections based on the assumptions and judgments described throughout this implementation strategy. Exhibit 5-3 summarizes the projected revenues, operating costs, initial and ongoing capital costs, Special Account interest yields, the resulting cash flows, and the Special Account balance at the start of each year over the 25-year period of 2015 to 2039.

**Exhibit 5-3. Financial Projection Estimates for Sloan Canyon NCA, 2015-2039**

	Total Revenue	Operating Costs	Capital Costs	SA Interest Yields/ Income	Cash Flow	SA Balance at Start of Year
<b>2015</b>	\$0	\$494,300	<b>\$1,200,000</b>	\$47,400	<b>(\$1,646,900)</b>	<b>\$63,245,200</b>
<b>2016</b>	\$0	\$506,700	\$0	\$46,200	<b>(\$460,500)</b>	<b>\$61,598,300</b>
<b>2017</b>	\$0	\$519,400	\$0	\$45,900	<b>(\$473,500)</b>	<b>\$61,137,800</b>
<b>2018</b>	\$0	\$532,300	\$0	\$45,500	<b>(\$486,900)</b>	<b>\$60,664,300</b>
<b>2019</b>	\$0	\$545,700	\$0	\$45,100	<b>(\$500,500)</b>	<b>\$60,177,500</b>
<b>2020</b>	\$29,200	\$945,500	<b>\$2,850,900</b>	\$44,800	<b>(\$3,722,400)</b>	<b>\$59,676,900</b>
<b>2021</b>	\$53,900	\$969,100	\$25,000	\$42,000	<b>(\$898,200)</b>	<b>\$55,954,600</b>
<b>2022</b>	\$79,600	\$993,300	\$25,600	\$41,300	<b>(\$898,000)</b>	<b>\$55,056,400</b>
<b>2023</b>	\$83,200	\$1,018,200	\$26,300	\$40,600	<b>(\$920,600)</b>	<b>\$54,158,400</b>
<b>2024</b>	\$87,000	\$1,043,600	\$26,900	\$39,900	<b>(\$943,600)</b>	<b>\$53,237,800</b>
<b>2025</b>	\$90,900	\$1,069,700	<b>\$4,615,800</b>	\$39,200	<b>(\$5,555,400)</b>	<b>\$52,294,200</b>
<b>2026</b>	\$95,100	\$1,096,400	\$28,300	\$35,100	<b>(\$994,600)</b>	<b>\$46,738,800</b>
<b>2027</b>	\$99,400	\$1,123,900	\$29,000	\$34,300	<b>(\$1,019,200)</b>	<b>\$45,744,200</b>
<b>2028</b>	\$103,900	\$1,151,900	\$29,700	\$33,500	<b>(\$1,044,200)</b>	<b>\$44,725,100</b>
<b>2029</b>	\$108,600	\$1,180,700	\$30,500	\$32,800	<b>(\$1,069,800)</b>	<b>\$43,680,800</b>
<b>2030</b>	\$113,500	\$1,210,300	\$31,200	\$32,000	<b>(\$1,096,000)</b>	<b>\$42,611,000</b>
<b>2031</b>	\$118,700	\$1,240,500	\$32,000	\$31,100	<b>(\$1,122,700)</b>	<b>\$41,515,000</b>

	Total Revenue	Operating Costs	Capital Costs	SA Interest Yields/ Income	Cash Flow	SA Balance at Start of Year
<b>2032</b>	\$124,100	\$1,271,500	\$32,800	\$30,300	(\$1,149,900)	<b>\$40,392,400</b>
<b>2033</b>	\$129,800	\$1,303,300	\$33,600	\$29,400	(\$1,177,700)	<b>\$39,242,400</b>
<b>2034</b>	\$135,700	\$1,335,900	\$34,500	\$28,500	(\$1,206,100)	<b>\$38,064,700</b>
<b>2035</b>	\$141,900	\$1,369,300	\$35,300	\$27,600	(\$1,235,100)	<b>\$36,858,600</b>
<b>2036</b>	\$148,400	\$1,403,500	\$36,200	\$26,700	(\$1,264,700)	<b>\$35,623,500</b>
<b>2037</b>	\$155,200	\$1,438,600	\$37,100	\$25,800	(\$1,294,800)	<b>\$34,358,800</b>
<b>2038</b>	\$162,300	\$1,474,600	\$38,000	\$24,800	(\$1,325,600)	<b>\$33,064,000</b>
<b>2039</b>	\$169,700	\$1,511,500	\$39,000	\$23,800	(\$1,357,000)	<b>\$31,738,400</b>

The estimates presented in the Exhibit 5-3 assume that initial capital costs to develop the proposed visitor facilities are incurred in years 2020 and 2025. The capital cost estimates are based on those reported for Phase 1 (in 2020) and Phase 2 (in 2025) presented in Chapter 3 of this report and escalated by annual inflation of 2.5%. In addition, ongoing capital costs are estimated at \$25,000 per year beginning in 2021 and reflect facility component renewal including building component replacements over the period, which are also described in Chapter 3.

The Special Account interest yields are projected at their current level of 0.075% over the 25-year period, which is judged to be somewhat conservative as yields will likely increase at least somewhat over such a long period. To be conservative, this analysis assumes that Special Account is the exclusive source of regular funding for the NCA. The total revenues and annual interest income help to offset the annual operating and capital costs, reducing the demands on the Special Account.

The cash flow presented in Exhibit 5-3 represents the net funding amount required annually to sustain the NCA and represents the annual drawdown from the Special Account. Finally, Exhibit 5-3 indicates that at the end of the 25-year period (in 2039), approximately 50% (or \$31,717,200) of the current Special Account balance of \$63,245,200 will remain.

Exhibit 5-4 demonstrates the impacts to the Special Account balance associated with medium and high interest yields of 0.500% and 1.000%, relative to the lower interest yields of 0.075% assumed in this analysis.

**Exhibit 5-4. Low, Medium, and High Annual Interest Income Projections  
and Impacts to the Special Account (SA) Balance**

	<b>LOW YIELD: 0.075%</b>		<b>MEDIUM YIELD: 0.500%</b>		<b>HIGH YIELD: 1.000%</b>	
	<b>Annual Interest Yield</b>	<b>SA Balance at Start of Year</b>	<b>Annual Interest Yield</b>	<b>SA Balance at Start of Year</b>	<b>Annual Interest Yield</b>	<b>SA Balance at Start of Year</b>
<b>2015</b>	\$47,400	\$63,245,200	\$316,200	\$63,245,200	\$632,500	\$63,245,200
<b>2016</b>	\$46,200	\$61,598,300	\$309,300	\$61,867,100	\$621,800	\$62,183,300
<b>2017</b>	\$45,900	\$61,137,800	\$308,300	\$61,669,800	\$623,000	\$62,298,500
<b>2018</b>	\$45,500	\$60,664,300	\$307,300	\$61,458,700	\$624,000	\$62,402,100
<b>2019</b>	\$45,100	\$60,177,500	\$306,200	\$61,233,700	\$624,900	\$62,493,800
<b>2020</b>	\$44,800	\$59,676,900	\$305,000	\$60,994,200	\$625,700	\$62,573,100
<b>2021</b>	\$42,000	\$55,954,600	\$287,700	\$57,532,000	\$594,300	\$59,431,700
<b>2022</b>	\$41,300	\$55,056,400	\$284,400	\$56,879,600	\$590,900	\$59,085,800
<b>2023</b>	\$40,600	\$54,158,400	\$281,100	\$56,224,600	\$587,400	\$58,737,400
<b>2024</b>	\$39,900	\$53,237,800	\$277,700	\$55,544,600	\$583,600	\$58,363,600
<b>2025</b>	\$39,200	\$52,294,200	\$274,200	\$54,838,800	\$579,600	\$57,963,700
<b>2026</b>	\$35,100	\$46,738,800	\$247,600	\$49,518,400	\$529,500	\$52,948,700
<b>2027</b>	\$34,300	\$45,744,200	\$243,700	\$48,736,300	\$524,500	\$52,448,500
<b>2028</b>	\$33,500	\$44,725,100	\$239,600	\$47,926,500	\$519,200	\$51,919,600
<b>2029</b>	\$32,800	\$43,680,800	\$235,400	\$47,088,400	\$513,600	\$51,361,000
<b>2030</b>	\$32,000	\$42,611,000	\$231,100	\$46,221,200	\$507,700	\$50,772,000
<b>2031</b>	\$31,100	\$41,515,000	\$226,600	\$45,324,400	\$501,500	\$50,151,800
<b>2032</b>	\$30,300	\$40,392,400	\$222,000	\$44,397,200	\$495,000	\$49,499,500
<b>2033</b>	\$29,400	\$39,242,400	\$217,200	\$43,439,000	\$488,100	\$48,814,300
<b>2034</b>	\$28,500	\$38,064,700	\$212,200	\$42,449,000	\$481,000	\$48,095,200
<b>2035</b>	\$27,600	\$36,858,600	\$207,100	\$41,426,600	\$473,400	\$47,341,500
<b>2036</b>	\$26,700	\$35,623,500	\$201,900	\$40,371,000	\$465,500	\$46,552,200
<b>2037</b>	\$25,800	\$34,358,800	\$196,400	\$39,281,500	\$457,300	\$45,726,400
<b>2038</b>	\$24,800	\$33,064,000	\$190,800	\$38,157,300	\$448,600	\$44,863,000
<b>2039</b>	\$23,800	\$31,738,400	\$185,000	\$36,997,700	\$439,600	\$43,961,300
<b>% of Start Balance</b>	<b>-</b>	<b>50%</b>	<b>-</b>	<b>58%</b>	<b>-</b>	<b>70%</b>

Exhibit 5-4 highlights the fact that relatively small increases in the annual interest yields have large impacts to the amount of interest income generated. For example, if the annual interest yield was 0.500% instead of 0.075%, the interest income generated in 2015 would be \$316,200 rather than \$47,400, and the remaining balance in the Special Account in year 25 (2039) would be 59% of the current balance. Similarly, under the high interest yield scenario, with a yield of 1.000%, 2015 interest income would be \$632,500 and the remaining balance in the Special Account in year 25 (2039) would be 70% of the current balance. Exhibit 5-4 demonstrates the fact that due to the large Special Account balance of over \$63,000,000 even relatively small changes in interest yields can translate into sizeable increases in annual interest income. The increase in interest yields, and therefore interest income, contribute to reducing the rate at which the Special Account funds are depleted.

This analysis finds that interest yields would need to increase to approximately 2.2% to enable annual interest income to cover *all* annual operating costs projected over the 25-year period, while maintaining the Special Account balance near current levels of \$63,000,000. Considering that interest yields in the past have been significantly higher, as much as 5.0% in 2006/2007, it appears possible that future yields could increase to levels above the 0.0075% yield assumed in this analysis, helping to sustain the Special Account balance.

### **Recommendations for Sustaining the Special Account**

In summary, the NCA is very well positioned to proceed with the funding of the proposed facility improvements, as well as future NCA operations, particularly due to the availability of Special Account funds. The Special Account provides BLM with the means of successfully funding improvements and operations into the future, which is permitted under current law and is one of the primary purposes for establishing the account. The following strategies are recommended to help sustain the Special Account funds over time.

#### ***Use of Partnerships to Support BLM Staff***

The use of labor contributions from partner organizations, particularly the use of volunteer labor, presents an important opportunity to engage the community and stakeholder groups, while helping to augment BLM staffing within the NCA. The use of partner labor provides an opportunity for the NCA to reduce operating costs and/or expand capacity. In this context, partnerships also include the use of commercial service providers operating within the NCA. Due to the proximity of the NCA to a major metropolitan area, there appear to be many partnership possibilities. The following are the likely partnership candidates and the potential roles of each:

- **Outfitters and Guides.** These are private enterprises licensed to operate within the NCA that the BLM can use for the following services:
  - Provide guide service in Petroglyph Canyon Management Area

- Deliver interpretive information to visitors
- Participate in maintenance of trails
- Resource monitoring
- Public outreach and marketing of the NCA
- **Friends of Sloan Canyon.** This is a local grassroots organization with over 400 members dedicated to the conservation and enjoyment of Sloan Canyon. Members of the Friends of Sloan Canyon have already expressed an interest and willingness in providing volunteer labor to support the NCA.
  - Provide guide service in Petroglyph Canyon Management Area
  - Deliver interpretive information
  - Participate in maintenance of trails
  - Marketing of the NCA
  - Assist staffing contact station
  - Provide a source for volunteer labor
- **Nevada Rock Art Foundation.** The Nevada Rock Art Foundation is a non-profit organization which actively promotes the protection and conservation of prehistoric petroglyphs in Nevada and surrounding areas. The Foundation focuses and developing and implementing programs that improve archaeological knowledge of petroglyphs and raise public awareness of the significance and importance of these cultural resources. Members of the Rock Art Foundation have also expressed an interest and willingness in providing volunteer labor to support the NCA.
  - Provide guide service in Petroglyph Canyon Management Area
  - Deliver interpretive information
  - Inventory and monitoring of cultural resources
  - Site stewardship
- **Southern Nevada Rock Art Association (SNRAA).** This nonprofit organization was established with the objective of providing free educational/interpretive programs to the public and assisting local government agencies in the study, preservation and protection of petroglyphs in Southern Nevada.
  - Provide guide service in Petroglyph Canyon Management Area
  - Deliver interpretive information
  - Inventory and monitoring of cultural resources
  - Site stewardship
  - Possibly guided hikes into Petroglyph Canyon

- **Great Basin Institute.** This nonprofit organization seeks to promote environmental research, education, and conservation throughout the western United States. The Institute also has the objective of promoting ecological/environmental literacy and habitat restoration through educational outreach and direct service programs. The Great Basin Institute is reported to be active within the NCA, assisting with trail maintenance/development programs.
  - Deliver interpretive information to clients
  - Participate in construction and maintenance of trails
  - Biological and ecological resource monitoring
  - Marketing of the NCA
  - User surveys and monitoring
  - Visitor center/contact station management
- **Henderson Trail Watch.** This is a City volunteer organization whose members promote safety and appropriate trail use on Henderson trails by providing information and assistance to all trail users and by observing and documenting safety issues/concerns.
  - Advocate for safe, responsible trail use
  - Participate in construction and maintenance of trails

### ***Reduction of Staffing and Operating Hours in the Off-Season***

It is recommended that BLM staff consider potentially reducing staffing during off-peak seasons and days. For example, weekdays during the summer months, June through August, will likely have the lowest levels of visitation during the year. Therefore, BLM might consider reducing staffing and operations during such periods. It is recommended that BLM first observe visitation levels and visitor facility use once the new visitor facilities have been fully constructed, and then consider reducing staffing during off-peak seasons/days as judged appropriate given the visitation levels that materialize.

### ***Negotiation of Capital and Service Contributions with the City of Henderson***

Continued close coordination with the City of Henderson regarding the City's commitment and ability to fund capital improvements impacting the NCA, including road/access and utility improvements at the northern boundary of the BLM lands leading into the Contact Station area, are recommended.

### ***Timing of Capital Investments to Develop Proposed Visitor Facilities***

The team recommends the following regarding the timing of capital improvements within the NCA:

- Fund capital improvements for the Contact Station facilities only after the City of Henderson provides a very strong commitment to constructing the access road leading to the BLM boundary. It is recommended that BLM use the construction of this access road as the trigger to begin construction of the Contact Station facilities serving as the gateway to the Petroglyph Management Area.
- Considering the low interest yields generated by the Special Account investments, delaying the construction of visitor facilities including the Contact Station and trailhead improvements will result in a greater reduction in the Special Account balance, as construction costs are likely to increase at a substantially higher annual rate compared to the interest yields on the Special Account investments. Therefore, the sooner construction can be funded the greater will be the savings to the Special Account.

### ***Use of Online Permitting/Ticketing Systems and Commercial Guide Services***

As discussed earlier in this chapter, the use of online, computerized ticketing systems, such as the systems used by Recreation.gov, is recommended. This will reduce BLM labor costs associated with managing the ticketing and reservation process for Petroglyph Management Area access.

### ***Optimization of Interest Yields by Investing in Treasury Securities with Different Maturities***

It is recommended that the BLM consider investing a *portion* of the Special Account funds in Treasury Securities having *longer maturities than 6 months*. As discussed earlier, the BLM has historically invested the Special Account funds in Treasury Bills with a maturity of 6 months. This is reasonable considering the need for the BLM to be able to convert the investments into cash to fund NCA operations and capital improvements. However, considering the size of the Special Account fund relative to the annual dollar amounts needed to fund NCA operations, it appears possible that a share of the Special Account balance could be invested in U.S. Treasury Securities with longer maturities paying higher interest yields.

Exhibit 5-5 summarizes the different interest yields for Treasury Securities of longer maturities and the corresponding annual interest income that would be generated in 2015 at these rates assuming the entire current Special Account balance of \$63,245,000 was invested in each security.

**Exhibit 5-5. Yields and Interest Income  
for U.S. Treasury Securities with Different Maturities**

<b>Maturity of Treasury Security</b>	<b>Interest Yield</b>	<b>Annual Interest Income in 2015</b>
<b>6 months (Current Investment)</b>	<b>0.07%</b>	<b>\$44,300</b>
1 Year	0.17%	\$107,500
2 Years	0.49%	\$309,900
3 Years	0.80%	\$506,000
5 Years	1.29%	\$815,900
7 Years	1.60%	\$1,011,900
10 Years	1.83%	\$1,157,400
20 Years	2.17%	\$1,372,400
30 Years	2.44%	\$1,543,200

As discussed earlier, currently all Special Account funds are invested in Treasury Bills with a maturity of 6 months, generating an interest yield of around 0.07% or an estimated annual interest income of \$44,300. The table indicates how interest yields increases as the length of the maturity increases, which also generates higher annual interest income. For example, if the fund balance of \$63,245,000 was fully invested in Treasury Notes with a maturity of 5 years earning an annual yield of 1.29%, the annual interest income would be \$815,900 instead of \$44,300. Even if half the Special Account funds were invested in 5-year Treasury Notes, the annual interest income would be nearly \$408,000, significantly higher than the current interest income of around \$44,000. The primary drawback from investing in securities with greater maturities is that they cannot be as easily converted to cash within the maturity period. It is recommended that BLM consider investing perhaps a portion of the Special Account funds in Treasury Securities with maturities greater than 6 months, as a means of generating higher interest income.



# **Sloan Canyon**

## **National Conservation Area**

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**April 2015**

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